DOCUMENT RESUME

ED 414 841 HE 030 827

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TITLE	Evaluation and Dissemination of an Undergraduate Program To Improve Retention of At-Risk Students.
INSTITUTION	Michigan Univ., Ann Arbor. Coll. of Literature, Science, and the Arts.
SPONS AGENCY	Fund for the Improvement of Postsecondary Education (ED), Washington, DC.
PUB DATE	1995-09-14
NOTE	138p.; Questionnaires printed on colored paper.
CONTRACT	P116B21398
PUB TYPE	Reports - Evaluative (142) -- Tests/Questionnaires (160)
EDRS PRICE	MF01/PC06 Plus Postage.
DESCRIPTORS	Academic Achievement; *Academic Persistence; Black Students; College Faculty; *College Students; Faculty Advisers; Grade Point Average; Group Counseling; *High Risk Students; Higher Education; Intervention; Minority Groups; Program Evaluation; *School Holding Power; Self Esteem; Student Attitudes; *Student Research; *Undergraduate Study
IDENTIFIERS	African Americans; *University of Michigan

ABSTRACT

This report describes a longitudinal evaluation of an on-going 5-year program at the University of Michigan to improve minority student retention and academic performance. The Undergraduate Research Opportunity Program (UROP) creates research partnerships between first- and second-year students and faculty researchers, and provides peer counseling, workshops in learning skills, and research peer groups. The evaluation compared students in the program with students matched for grade point averages and college entrance examination scores who had applied to the program. Among evaluation findings are: (1) UROP students had an attrition rate 32 percent lower than underrepresented students university-wide; (2) African-American students in UROP showed an attrition rate 51 percent lower than control group students; (3) participation in UROP resulted in grade point averages some 6 percent higher than all students; and (4) UROP appeared to positively affect student self-esteem, coping strategies, learning behaviors, and expectations about academic performance. Individual sections of the report present an executive summary, an overview of the project, and a description of the project's purpose, background and origins, major components, and evaluation/results. Appendices include the UROP brochure, newsletter, and faculty handbook, the survey instruments, and a draft paper titled "Undergraduate Student-Faculty Research Partnerships Affect Student Retention" (Biren A. Nagda and others). (DB)

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Evaluation and Dissemination of an Undergraduate Program to Improve Retention of At-

Cover Sheet

ED 414 841

Grantee Organization:

University of Michigan
Undergraduate Research Opportunity Program
College of Literature, Science, and Arts
580 Kennedy Drive
Ann Arbor, Michigan 48109

Grant Number:

P116B21398

Project Dates:

Starting Date: September 15, 1992
Ending Date: September 14, 1995
Number of months: 36

Project Director:

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FIPSE Program Officer: Frank Frankfurt

Gift Award:

Year 1	$71,742
Year 2	$74,529
Year 3	$76,987
Total	223,258

HE030827

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University of Michigan
Evaluation and Dissemination of an Undergraduate Program to Improve Retention of At-Risk Students
Summary

This FIPSE project is an in-depth evaluation of the effectiveness of the Undergraduate Research Opportunity Program(UROP) in improving minority student retention and academic performance. UROP creates research partnerships between first and second year students and faculty researchers . UROP's underlying premise is that attrition of underrepresented minority students is caused by their failure to identify with and engage in the academic mission of the university. Additional program components include peer advising, learning skills workshops, and research peer groups, The evaluation looks at: (a) the effect of the program on student performance including retention to graduation; (b) the effect of UROP on student attitudes toward their intellectual capability; (c) the effect of student-faculty research partnerships on the faculty ; (d) program and service delivery. The study uses both an experimental group of students(those who applied and were admitted) and a control group (students who applied but were not admitted.) The program appears to have a significant effect on both retention and academic performance.

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Evaluating the Benefits of the Undergraduate Research Experience
University of Michigan
Executive Summary

Project Directors: John Jonides and Sandra Gregerman (313/747-3646)

A. Project Overview

This FIPSE funded project differs from many of FIPSE's efforts in that it funds primarily an in-depth evaluation of the effectiveness of the Undergraduate Research Opportunity Program in improving student retention and academic performance with a special focus on minority students. The Undergraduate Research Opportunity Program was founded in 1988 in the College of Literature, Science, and Arts at the University of Michigan.

The centerpiece of the Undergraduate Research Opportunity Program is the creation of research partnerships between first and second year students and faculty researchers. Unlike traditional efforts to improve minority student retention that rely heavily on student affairs personnel and remedial approaches, UROP involves large numbers of faculty in a major retention effort emphasizing excellence and achievement. UROP also provides additional academic support services and leadership opportunities for students. These include: (1) a peer advising program that includes individual peer advising sessions and group sessions for students engaged in common research areas; (2) workshops on learning and research skill development, e.g. time management, library research in the Information Age, computer applications, and research abstract writing; and (3) research symposia.

B. Purpose

UROP received funding three years ago from the U.S. Department of Education's Fund for the Improvement of Postsecondary Education (FIPSE) to conduct an in-depth, five year program evaluation of the program's effectiveness in improving undergraduate teaching and minority student retention and academic achievement. The first phase of this longitudinal evaluation has been completed and the program appears to have a significant effect on both retention and academic achievement.

C. Background and Origins

When the program was initially instituted, the University of Michigan was several years into a major effort to increase diversity on campus. Recruitment efforts had begun to yield positive results, but retention of students of color was troublesome with a 65% retention rate for minority students compared to 85% for majority students. Existing programs on campus to improve student retention were having a limited effect, and it was clear new ideas were needed.

In searching for a new approach, an extensive examination of higher education literature was undertaken to understand the factors affecting student attrition. The causes and explanations for student attrition are many in number resulting in a variety of efforts to improve retention on college campuses nationwide. Broadly speaking these efforts can be classified into two categories. One set of programs is based on the notion that students leave college because they come under prepared for college work. Responses to this perspective are typically cast in the form of remedial and tutorial programs of various sorts. The second category of retention efforts concentrates on structural inadequacy in meeting the needs of students so that they can remain in college through graduation. Related solutions include financial aid, personal support groups and counseling as well as diversity training for faculty , staff, and students.

UROP's approach , utilizing faculty/student research partnerships, is based on emerging perspectives about the causes of attrition. These perspectives focus on the interaction and integration of the student into the academic and social fabric of higher education institutions. Lack of integration, or isolation of the individual within the institution has been identified as an important factor in student departure. Indeed, Pascarella and Terenzini (1979) cite the absence of sufficient interaction with other members of the college community as the single leading predictor of college attrition especially for underrepresented minority students. For African-American students, the amount of faculty contact is found to affect both retention (Braddock 1981) and academic performance (Nettles, Thoeny & Gosman 1986), especially at majority institutions (Braddock 1981; Fleming, 1984).

Successful programs must also fit the institution's mission and culture. UROP builds directly on one of the key academic missions of a large public research university and by design weaves students into this academic mission early in their academic careers. UROP seeks to respond to the call by Pascarella and Terenzini(1991) : "Whatever form engagement might take...students should be helped early in their careers to find academic and social niches where they can feel that they are part of the institution's life, where friendships can be developed, and where role models(whether student or faculty) can be observed and emulated." With this perspective in mind, the College of Literature, Science, and Arts recognized that faculty needed to be centrally involved in the effort.

While there has been a burgeoning of undergraduate research programs throughout the country, UROP is unique in its emphasis on minority student retention , its engagement of first and second year students, the length and timing of the research experience (it is an academic year program occurring concurrently with students' coursework), the involvement of students across the spectrum of academic abilities (not only honors students), and in the academic support services described elsewhere.

D. Project Description

This project is a large-scale evaluation of an intervention program to improve the retention and academic performance of historically underrepresented minority students. There are four dimensions to this evaluation: (a) to evaluate the effect of the program on student performance, including retention to graduation; (b) to assess the effect of UROP on the attitudes of students toward their intellectual capability, college work, academic potential ,etc.;(c) to measure the effect of student-faculty research partnerships on the faculty who are involved assessing any changes in faculty's perceptions of students; (d) and to determine how well the mechanics of the program work. The evaluation uses both an experimental and control group design and pre and post-test survey instruments.

E. Evaluation/Results

Methodologically, the strength of this study lies in having a matched control group composed of students who applied to the program. These students were then matched based on identical GPAS and SAT/ACT scores. There are four dimensions to this evaluation: (a) to evaluate the effect of the program on student performance, including retention to graduation; b) to assess the effect of UROP on the attitudes of students toward their intellectual capability, college work, academic potential, etc.; (c) to measure the effect of student-faculty research partnerships on the faculty who are involved, assessing any changes in faculty's perceptions of students; (d) and to determine how well the mechanics of the program operate, looking for changes in operation that may improve service to students. Our evaluation effort includes the creation of carefully matched control groups for each cohort of students we are tracking.

Our analysis of data so far has concentrated on academic outcomes, especially retention, academic performance, and course selection patterns. We are encouraged by the results obtained to date. Our findings include: (a) a comparison of attrition rate between UROP students and underrepresented students university-wide reveals that UROP students had an attrition rate 32% lower than underrepresented students in general (13.6% vs. 20.0%); (b) African-American students in UROP show an attrition rate 51% lower than those in our respective control group (9.2% vs. 18.6%); (c) attrition for White and Asian students in UROP with low grade point averages was 0% vs. 12% for students in our White and Asian control group; (d) participation in UROP resulted in grade point averages some 6% higher, 2.73 vs. 2.58 for all students; (e) African-American students in UROP show a 7% grade point average difference (2.69% vs. 2.51%); (f) UROP seems to be having an effect on self-esteem, coping strategies, learning behaviors, and expectations about academic performance, especially for African-American students in the program; and (g) underrepresented students in UROP feel more supported by the University than students in our control group.

In addition to the findings reported above we are also examining the effect of the program on faculty. Evaluation of faculty in UROP has revealed interesting results that speak to the impact of the program beyond the partnership. For example, at the end of the year. faculty are more likely to say they are interested in student life outside the classroom and how this relates to academic performance. Further, faculty become aware of the difficulties on campus faced particularly by underrepresented minority students. The two most often cited benefits that faculty report are assistance in the progress of their research and an enhanced multicultural awareness. Faculty who participate in UROP report a stronger appreciation of the value of diversity in the University as well as a better understanding of barriers to success that minority students and women in science encounter at the University of Michigan.

E. Summary and Conclusions

At present we have little basis to analyze which of the components of UROP are the most effective in promoting student retention and academic achievement. We can, however, venture that regular faculty contact provides an engaging one-on-one relationship and fosters academic competency --computer literacy, critical thinking, teamwork, substantive reading related to hands-on activities, and academic integration. It also provides students with opportunities for continued discussion of ideas and concepts outside the classroom while helping students make vital connections to classroom theory and concepts. Student's involvement in investigating, understanding, and producing knowledge serves to emulate the strengths of a research university in students ' academic experience, and in turn, faculty see a larger role for research to play in the classroom.

On a broader level, UROP has implications for the nature of undergraduate education. The program provides ample evidence that it is possible to concentrate on both the educational and research mission to the benefit of undergraduate students. It also demonstrates one can and should engage faculty in retention efforts. Programs like UROP enable faculty to make strong connections between their research and undergraduate teaching and underscores the fact that undergraduate student success and satisfaction at research universities need not be incongruous.

A. Project Overview

This FIPSE funded project differs from many of FIPSE's programs in that it funds primarily an in-depth evaluation of the effectiveness of the Undergraduate Research Opportunity Program in improving student retention and academic performance with a special focus on historically underrepresented minority students. UROP was founded in 1988 in the College of Literature, Science, and the Arts at the University of Michigan; since its inception, it has enrolled some 1460 students. Shortly after it was piloted, the need to measure the program's effectiveness in improving student retention and academic performance was identified.

Their are four dimensions to the evaluation : (a) to evaluate the effect of the program on student performance including retention to graduation; (b) to assess the effect of UROP on the attitudes of students toward their intellectual capability, college work, academic potential; (b) to assess the effect of UROP on the attitudes of students toward their intellectual capability, college work, academic potential, etc.; (c) to measure the effect of student-faculty research partnerships on the faculty who are involved; and (d) to determine the effect how the program works. To implement this evaluation, we tracked all students who had participated in UROP since its inception. During the early years of the program's existence, due largely to its small size at that time, there were no proper control groups against which to compare the retention and academic performance of UROP students. The creation of systematic control groups began in the 1991/1992 academic year and continued through the 1993/1994 academic year. Majority students were not included in UROP or its control group until the 1992/93 academic year, and so the evaluation of their retention is limited to those years.

Based on the results of the first phase of this longitudinal evaluation , UROP appears to have a significant effect on the retention and academic performance of students of color, especially African-American students (as described in detail in the body of this report.) However, while the retention and performance data are encouraging, our early assumptions about why UROP would improve retention and academic performance, have not been demonstrated to be predictive of the positive retention and academic performance results. These assumptions were based on cognitive/social measures such as self-esteem, coping strategies, depression, and group identity which we hypothesized would lead to improved retention and academic performance.

B. Purpose

In the late 1980s and early 1990s the University of Michigan instituted two major initiatives , the Michigan Mandate to improve the recruitment and retention of historically underrepresented minority students and the Undergraduate Initiative to improve undergraduate teaching at a large public research university. At the time of UROP's creation, the university had increased the number of minority students on campus, but attrition continued to be a problem , although not unique to Michigan.

In 1993, 2.4 million students entered college; of those, some 1.1 million will leave and never receive a degree. This is not a new trend. Data from the American College Testing Program (ACTP) show that the first-year attrition rate for all students in four-year public universities has remained largely unchanged over the last decade (ACTP, 1983, 1986, 1990, 1992). The phenomenon of college attrition is even more exaggerated among certain underrepresented minority groups (i.e. African American, Hispanic American and Native American students). Hispanic Americans graduate at a rate of only 35%, and African Americans graduate at a rate of only 45%, far below the rates for White students (Brower, 1992).

The causes of attrition are many in number, thereby leading to multiple efforts to increase retention. Broadly speaking, retention efforts can be classified into three categories. One is based on the notion that students who do not remain in school through graduation are ones who were under prepared for college work when they entered (Tinto, 1993). This class of theory assigns responsibility for attrition to factors having to do with student characteristics. Responses to this perspective are typically cast in the form of remedial and tutorial programs of various sorts. The second type of retention effort concentrates on what may be termed structural inadequacy in meeting the needs of students so that they can remain in college through graduation (Tinto, 1993). Programs that take this perspective have typically concentrated on developing retention programs focused on financial aid, academic counseling, and personal support regimens. A more recent perspective on student life and student attrition concentrates on the interaction of the student with the social structure, examining such issues as the extent to which students are integrated into the fabric of the higher education institution (Tinto, 1993). Solutions to attrition according to this perspective attempt to create communities and groups that involve some changes in situational climate while simultaneously involving students in skill-building and interest-building activities.

The Undergraduate Research Opportunity Program (UROP) was created in 1988 to involve first and second year undergraduate students in research partnerships with faculty. In addition, the program now includes a range of academic support services that grow out of the research partnerships and identified student needs. During the past academic year, UROP enrolled approximately 600 students in these partnerships, and during the coming year, it is targeted to enroll some 800 students. These partnerships, plus activities that involve peer advising and peer research groups create for these students an intellectually challenging and stimulating environment outside of the classroom. The program is built on the idea that creating such an environment will help students identify with the intellectual mission of the University; it will provide a challenging activity that is recognized across the University as an enriching experience, not a remedial one; it will provide greater access for students to the faculty of the University; and it will enroll students with diverse backgrounds in a way that builds a multicultural community around academic activities. In all these ways, UROP was created with the hope that it would improve retention and academic performance among the students it serves.

C. Background and Origins

The University of Michigan is a large, public research university, with a student body that is primarily white. The university's research mission is widely recognized and in fact research revenues at the university, even in a time of shrinking funds, continue to grow. UROP, as discussed earlier, was instituted in conjunction with the Michigan Mandate, an effort to increase diversity on campus. Its rapid growth and success is due to many factors, however its institutional success and support can be attributed to two key factors: the program's emphasis on research, engaging students with faculty in one of the faculty's principal enterprises and (2) the Undergraduate Initiative an effort to improve undergraduate education in order to continue to attract high quality students (allowing the program to garner internal funds).

The program is administratively housed in the College of Literature, Science, and Arts in the Dean's office. This administrative home, in academic affairs vs. student affairs has been critically important to the program's acceptance and endorsement by faculty participants and deans in other schools and colleges in which students conduct research. Faculty view the program as academically based and support it in ways that few faculty typically support initiatives coming out of student affairs. As the program has grown and become university-wide there has been some interest in moving the program centrally to a student affairs unit, however the program will remain in its current administrative home.

When UROP first started, the program did not have a peer advising/student services component. This program component is critical in order to monitor the increased number of research partnerships, keep track of the hundreds of students in the program, and maintain regular communication with faculty research sponsors. Along with the peer advising, new academic and research support services have been developed including learning/research skills workshops, and research peer groups. Based on student feedback we think these are very important components of the program but to date have not evaluated these program components separately to see what role they play in improving student retention and academic performance. The peer advisors are all UROP alumni who are juniors and seniors and work an average of 12 hours per week.

The University of Michigan has shown extraordinary commitment to UROP since its inception. The College of Literature, Science, and Arts and the central administration provided seed support to implement UROP in its nascent form. Following this, the College and the University provided substantial cost-sharing support to match outside funding that was acquired from a former FIPSE grant, from a State of Michigan Department of Education agency, from the Howard Hughes Medical Institute, and from private donors. During this time, the College undertook a major study of its undergraduate curriculum and part of the revitalization of that curriculum that followed included UROP as a cornerstone activity. The College has also provided increased space for the administration of UROP, and it has now established a standing budget for the program from College funds, beyond any outside support. Another important indication of commitment is the inclusion of UROP as a major fundraising item in the University Capital Campaign that is now underway. Reports on the success of fundraising for UROP by the Dean indicate that some 75% of the goal for endowment for UROP has been reached. However, with this support comes increasing demands on the Program Director's time to write proposals, meet with prospective donors, and create new program initiatives which are related outgrowth's of the existing enterprise but new programs in their own right. These activities are highly time intensive given the size of the full-time professional staff: program director, administrative assistant, and program coordinator and the current size of the program.

D. Project Description

This FIPSE funded evaluation project cannot be fully described without a detailed description of the program under evaluation, the Undergraduate Research Opportunity Program. The centerpiece of UROP is the creation of research partnerships between faculty and first and second year students,thereby involving undergraduate students in the research activities of the faculty early in their academic careers. Like many such programs that exist throughout colleges and universities in the country, UROP brokers intellectual relationships between faculty and students that revolve around research activities. In doing so, UROP shares many features in common with other such programs, and it has some that distinguish it from other programs as well. The major features of UROP are these:

1. It focuses exclusively on first and second year undergraduate students, a large percentage of whom are underrepresented minority students.

2. UROP enrolls students largely during the academic year rather than during the summer between semesters.

3. Faculty sponsors of UROP students come from all the schools and colleges of the University.

4. The incentives for students to participate in UROP are two in number. Students can obtain academic credit for their research partnership each of the semesters they are enrolled, or they can earn wages for participating.

5. The incentives for faculty are these: They have the benefit of gaining additional research assistance at no financial cost to their research program; they receive modest funding to support the costs of work they are doing with their undergraduate partner; and they are given opportunities to showcase their research at various local venues.

6. UROP permits students to "shop" for a research partnership that fits their own interests and needs.

7. UROP offers students a range of support services that go well beyond merely partnering students with faculty.

8. UROP is not an "honors" program like many other undergraduate research programs; average and even "marginal" students have the unique opportunity to interact with faculty in a close relationship.

9. UROP feels a special responsibility to two sub-groups of students within the University's enrollment: underrepresented minority students and women with an interest in the sciences.

10. The program is large in its enrollment (for example, some 600 students and over 250 faculty have participated during the 1994-95 year).

11. UROP is an integral part of the University's curricular offerings for undergraduates. Thus, it is not a marginalized addition to the array of offerings on campus, but a central feature of the opportunities that Michigan presents to all of its undergraduate students.

12. An essential component of UROP is its design and execution of an elaborate assessment effort. described in great detail in this final report.

Students are recruited for UROP either before they begin their first-year at the University, or toward the end of their first-year. The recruitment process is multi-pronged and includes direct mailings to prospective students, mailings to current first year students, presentations to academic advisors, presentations at student and parent orientation sessions, publicity in residence halls and classes, and presentations to outreach programs involving high school students. Many students also come to the program on recommendations from program "alumni" and faculty.

The program has various key components, among which the leading ones are these:

Peer advising. The vast majority of students have never participated in a research project before or had close contact with a faculty mentor. The actual research partnership is, therefore, supplemented by a peer advising component to smooth the transition to a new experience. Students meet monthly with peer advisors who are all program alumni. The students talk to the peer advisors about their on-going research, problems they encounter with their faculty partner, research-skill development, time management, academic course work, and course selection. Students are also required to keep a weekly journal that provides an opportunity for self-reflection about the experience and a means to communicate about problems with their peer advisors.

Intensive peer advisor training takes place in early September and in-service training programs are held all year. Training includes sessions on program planning, intergroup relations, facilitating discussions, the "dos and don'ts" of peer advising, and the development of counseling skills through role-plays. In addition, the staff participates in a day-long challenge program run by the university's outdoor leadership program.

Research groups. Students are assigned to research interest groups of 20 students led by their peer advisor. These groups are organized around common research themes--biomedical, social science, physical science and engineering, biological and environmental science, humanities, and women-in-science. They allow for student networking, sharing research experiences with peers, hearing guest speakers, discussing new, interesting and controversial issues in the field, and learning more about campus resources. The group setting also allows for skill-building workshops, such as time management, résumé-writing, and pursuing summer research jobs and internships.

Faculty recruitment. Faculty are recruited through direct mailings, presentations at faculty meetings, announcements on electronic mail bulletins and staff/faculty newspapers, and word of mouth. At this stage in the maturity of the program, an important component in faculty involvement is the high return rate of faculty who have participated previously; from 1992/93 to 1993/94, for example, the return rate was over 90%.

Faculty/student matching. Students in the program are not assigned to a faculty sponsor; rather, students are selected by a faculty sponsor. After careful examination of the "research project book," students select 5-6 projects of interest and arrange interviews with the faculty sponsors. The faculty sponsors then choose the students with whom they would like to work, and the students learn more about different projects so they can find a good fit.

Research presentations. Students are encouraged to present their research in numerous forums. Each student is required to make a short research presentation in his/her research group. Three large research symposia are held each year: one in January as part of the university-wide observance of Martin Luther King Jr.'s birthday, a gender-based research symposium in March, and the Annual Spring Research Symposium.

Grading of students. Students who participate in UROP for academic credit receive either letter grades or a pass-fail notation for their participation, depending on their choice when they enroll. The grades are based on their research performance, a final paper, oral or poster presentation, participation in the research peer groups, the quality of their journals, and their participation in other program activities.

E. Evaluation /Project Results

The FIPSE funded evaluation program includes comparing the performance of students in UROP with a matched control group of students who had applied to UROP, but who had been denied admission because of the limited size of the program. For three years, the UROP and control cohorts have been tracked to measure their retention rates, their academic performance, and their course and credit selection patterns. This evaluation has resulted in a striking and important demonstration of the effectiveness of research partnerships and their support services in retaining students and in enhancing their academic performance, as we detail below in describing some of the results of the evaluation to date. As indicated in the evaluation results presented below, UROP has been demonstrated to have important value as an intervention program for student success, one that is especially helpful for underrepresented students as well as for majority students. This evaluation is particularly noteworthy because it is the largest one of its kind in the entire country, one that will have far-reaching impact on other institutions that have the interest and resources to begin programs like UROP. As such, our experiment is a nationally significant one.

The evaluation of UROP is unique in its size, its scope, its rigor, and its potential to inform a host of other institutions of the value of research partnerships as integral components of an undergraduate curriculum. Also, in that we are trying to isolate the critical factors that make UROP successful, our results may well be informative about interventions for retention and performance that do not include a research component at all. The results to date about UROP's success make clear that it has dramatic effects in enhancing retention and student performance in the short-term. 3.

In all, the retention and academic performance data are based on 859 students who participated in UROP and 837 control students who did not. The assignment of students to UROP or to the control groups was done by a matched random assignment in the following manner. All students in a cohort who applied to gain entrance to UROP each year were sorted into sub-groups based on ethnicity, SAT/ACT scores, and high school grades. Students within each of the sub-groups were then randomly assigned to UROP or the control group for that year. All applicants were then sent a letter indicating that there had been more applicants than there were positions in UROP, and so a lottery had been held to determine entrance to the program. Students who had been selected for UROP were then told that they had succeeded in gaining entrance through the lottery, and students who were assigned to the control group were told that they had not succeeded in the lottery. In this manner, control students were not made to feel that their rejection from the program was based on their qualifications. We chose to use a control group selected in this way in order to compare two sets of students equally motivated to participate in a research program.

The retention and academic performance data for students in UROP and the control group come from the Office of the Registrar at the University. They consist of the registration status of each student by term, the courses for which they enrolled, their cumulative grade point averages, demographic information (race, gender, geographic location, etc.), and entrance test scores. Retention is defined as students' persistence through graduation. This is then a dichotomous variable--persisters and non-persisters. Stop-outs--those students who depart for a certain period of time but return to continue their studies--are considered persisters. We examine only institutional departure (leaving the University of Michigan), not system departure (leaving higher education entirely).

Let us examine first the data on retention of students in UROP. First, UROP seems to have a profound effect on the retention of underrepresented minority students. Figure 1 below shows the percentage attrition for 339 students in UROP and for 2009 underrepresented students who did not apply to UROP, all of whom entered the University in years 1990-1993. A comparison of attrition rates reveals that UROP students had an attrition rate some 56% lower than underrepresented students in general (10.3% versus 23.3%, $p < .0001$). One might argue that this comparison is unfair because UROP students come from a self-selected group of motivated students who are eager for educational enrichment, and therefore enroll in programs such as UROP. This argument is without grounds, however, as shown in Figure 2. This figure compares attrition for 339 UROP participants and 226 control students who were matched to the UROP students on motivation as well as demographic variables (as defined above). The comparison reveals that the students in UROP had an attrition rate 35% lower than the control students (10.3% versus 15.9%, $p = .06$). Thus, the effect of UROP on lowering attrition appears quite robust. At this time, it is difficult to determine whether the greater immunity from attrition conferred by UROP is uniform across the different sub-groups of underrepresented students because we do not yet have sufficient numbers of Hispanic-American or Native-American students in our sample.

FIGURE 1: ATTRITION AMONG UNDERREPRESENTED MINORITY STUDENTS ENTERING U-M IN 1990 THROUGH 1993

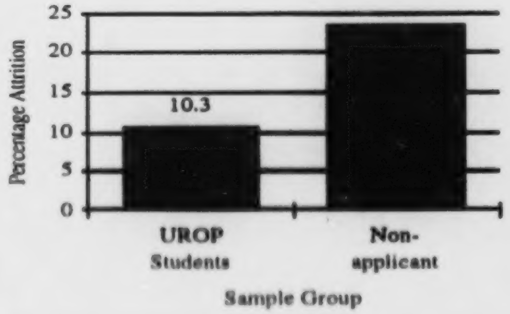
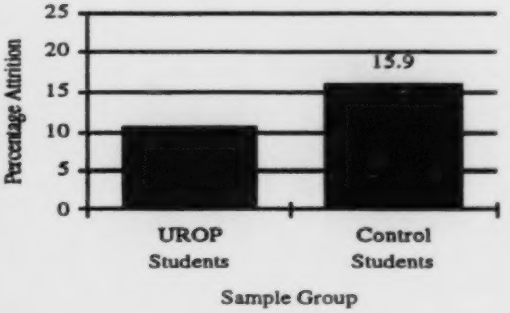


FIGURE 2: ATTRITION AMONG UNDERREPRESENTED MINORITY STUDENTS IN UROP PARTICIPANT AND CONTROL GROUPS



There *are* sufficient numbers of African-American students to show that UROP does have an effect on their retention, however: Figure 3 shows that of 237 African-American students in UROP, the attrition rate was 10.1% versus a rate of 18.4% for 152 students in the control group (a reduction in attrition of 45%, $p < .03$). At present, there does not seem to be a comparable effect for Hispanic students: Students in UROP had an attrition rate of 11.6% while students in the control group had attrition of 11.3% ($p = .83$). These data are based on sample sizes of 95 and 71, however, and it may be that these sample sizes are simply too small to reveal any effect. Nevertheless, we remain vigilant to the distinct possibility that the effect of UROP on attrition of underrepresented students may vary with each of the sub-groups of these students, and we propose to follow this issue in future research.

Paralleling the effect on attrition of underrepresented students, UROP also has an effect on attrition for majority students. Figure 4 shows that the attrition rate among 281 White students in UROP was 3.2% while that of 442 control White students was 6.1%. This difference of 48% is notable in magnitude, however given the small numbers of students who actually dropped out for both groups, it does not yet reach statistical significance ($p = .13$). Likewise, the difference in attrition of Asian-American students (4.4% for UROP compared to 5.9% for the controls, $p = .84$) is not reliable.

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FIGURE 3: ATTRITION AMONG AFRICAN AMERICAN AND HISPANIC AMERICAN STUDENTS

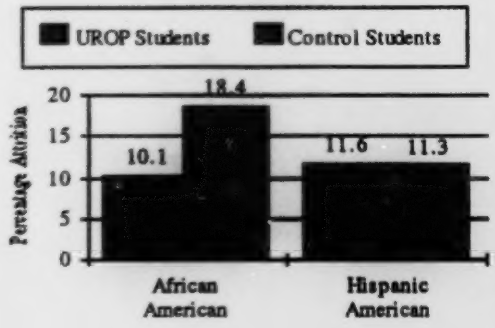
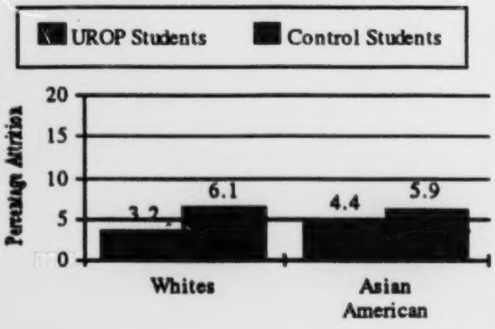


FIGURE 4: ATTRITION AMONG WHITE AND ASIAN AMERICAN STUDENTS



Overall, the developing data on retention suggest that UROP has an immunizing effect, although with differing strength depending on the racial/ethnic group assessed. This effect is most pronounced for African-American students. However, the trends that are present for these students are also present for White students and for Asian-American students as well, indicating that the program's effects on attrition may reach widely.

Further analysis of retention data reveals that UROP has its greatest effect on students who perform least well in school. We split the underrepresented students and the majority students into two groups each based on either their GPA prior to entering Michigan, or their GPA for the first year they were at the University if they were sophomores. Students with relatively high GPAs did not benefit much from UROP in terms of their retention (4.8% for UROP versus 7.0% for controls for underrepresented students, and 3.7% for UROP and 3.3% for controls for majority students). However, there was a large and reliable effect for students whose GPAs fell below the median. For underrepresented students, the difference in attrition between UROP and control students was 16.9% versus 23.7% respectively ($p < .23$), and for majority students the comparable figures were 4.0% versus 8.5% ($p < .11$). This alerts us to the possibility that UROP may confer the greatest benefit on students who are least prepared when they enter college, a trend that we plan to investigate further.

Another interesting trend in the retention data concerns the retention effect on first year versus second year students. While UROP does provide some protection against attrition for first year students (underrepresented: 11.9% for UROP versus 14.4% in control, $p = .61$; majority: 5.3% for UROP versus 6.4% for control, $p = .77$), the effect is small compared to the effect for second year students. For this group, the effect of UROP on retention is quite large (underrepresented: 7.5% for UROP versus 17.9% for control, p

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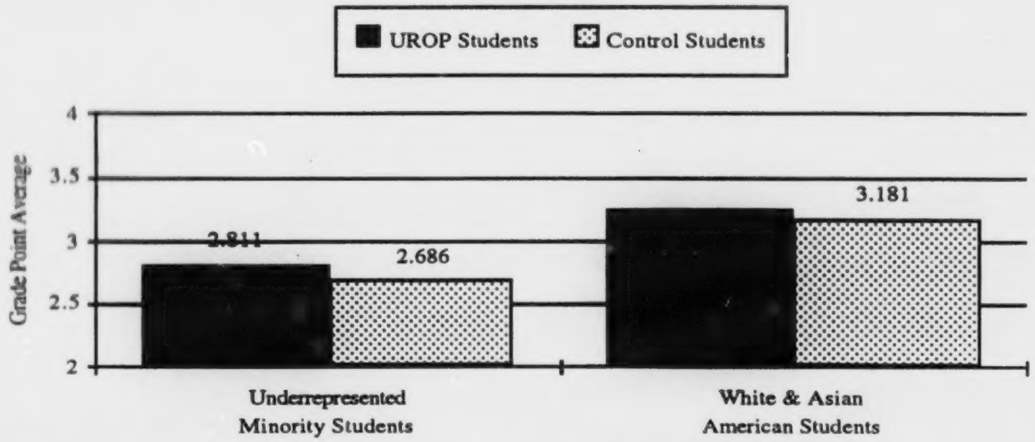
< .04; majority: 1.6% for UROP versus 5.7% for control, p < .06). These data could have significant implications for the design of programs such as UROP if further analysis bears them out.

Overall, then, the analysis of retention effects has proven the value of UROP generally, as well as its value for specific groups of students in particular. Beyond affecting just retention, UROP also seems to have notable impact on the performance of the students who stay in school. Figure 5 compares the GPAs of underrepresented and majority students from UROP and the control groups. The figure shows that for underrepresented students, UROP results in a 5% increase in GPA (p < .008), and for majority students, the effect is 2% (p < .04). Finer grained analysis shows that the effect on GPA is present for African-American students (p < .06), Hispanic students (p < .04), and White students (p < .03), but not for Asian-American students when these groups are considered separately. As with the retention data, more detailed analyses of these effects of UROP on GPA show that the greatest improvement in GPA occurs among the least prepared students. As shown in Figure 6, for underrepresented students, those who start with relatively low GPAs improve their GPAs due to UROP by 6% (p < .007) while those with relatively high GPAs improve by just 2% (p = .05). Likewise, for majority students, those with low GPAs improve by 3% (p < .02) while those with high GPAs do not improve at all.

FIGURE 5: ACADEMIC PERFORMANCE AMONG UNDERREPRESENTED MINORITY, WHITE & ASIAN AMERICAN STUDENTS



These data bear out the trends suggested by the retention data as a function of preparedness: The greatest benefit of UROP is conferred on the least prepared students.

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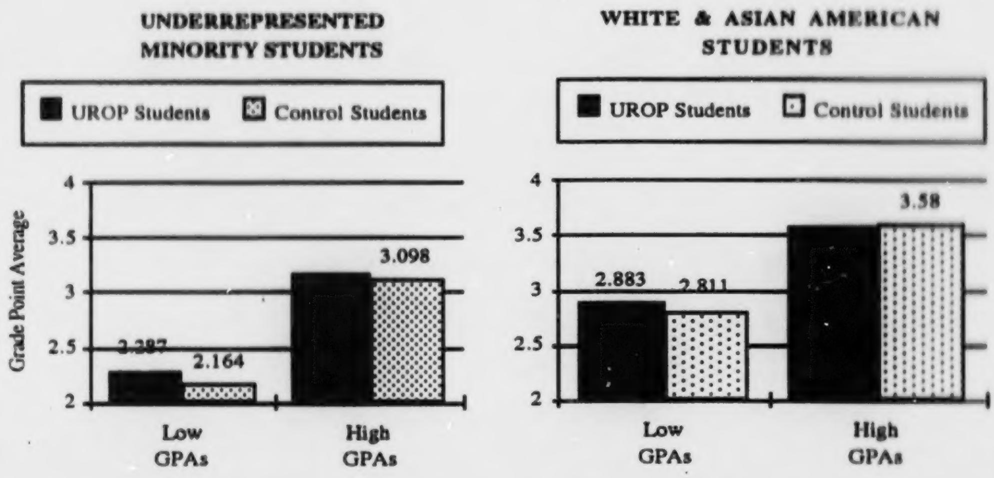
Before drawing firm conclusions about this trend, however, further analysis of the retention and performance data is required.

FIGURE 6: COMPARISON OF EFFECTS FOR LOW AND HIGH PERFORMING STUDENTS



The data we have presented above are but a selection of the effects that can be investigated using the database we have collected, and so we continue to examine the data for possible effects of UROP on course selection patterns, majors, etc. At the same time, however, we have now begun a search for the causes of the retention and performance effects that we have documented and those we expect to uncover with further analyses. What, in short, are the critical factors that cause the benefits of UROP? Our first attempt to address this question was to conduct a large-scale survey of UROP and control students, in which we assessed such characteristics as identity with college, self-esteem, collective self-esteem, attribution styles, and other social psychological variables. This survey yielded some quite interesting effects of UROP that are too numerous to recount here. Importantly, however, they yielded little that predicted the performance and retention effects for which we hope to account. That is, causal modeling, in which we try to predict the performance and retention effects using items or scales from the survey, yielded little.

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Therefore we continue to be motivated by a desire to pinpoint the critical variables that predict performance and retention changes caused by UROP. Toward this end, we have proposed and been funded by FIPSE to engage in three further activities that may be revealing about the effects of UROP. These activities are described as follows.

One of the weaknesses of the evaluation is that it concentrated on attitudinal questions and largely ignored aspects of students' behavior that may have changed as a result of participation in UROP. To complement this survey, we will construct a new survey and administer it to UROP and control students (selected as we have selected prior groups of controls students, described above) in the 1995-96, 1996-97, and 1997-98 academic years. This survey will concentrate exclusively on self-reports of behaviors in which students engage that may be telling about their academic performance and retention.

We shall ask students to think about their activities during the week prior to the administration of the survey and to report on these activities. They will indicate their responses to a number of queried items by responding whether they "never", "occasionally", "often", or "very often" participated in them during the prior week. We shall select a week to administer the survey so that we collect data on a representative week in the academic lives of the UROP and control students.

The survey will ask students to self-report on a variety of behaviors that may be predictive of academic success. These include: (a) active participation in classroom discussions, (b) leading a discussion or making a presentation in a class, (c) asking questions in a class, (d) approaching professors or TAs to ask further questions about class material, (e) visiting a professor or TA during office hours to follow up on class material, (f) working on practical application of coursework, (g) asking for help in writing from an instructor, (h) seeking resources in a library, (i) asking for comments on writing from peers, (j) explaining coursework to another student, (k) giving feedback to peers on their work, (l) having intellectual discussions with other students, (m) having discussions with others from a different cultural background, (n) seeking out campus resources such as academic advisors, (o) keeping a system of scheduling, such as a planner, (p) prioritizing their work activities, (q) spending time studying individually, (r) spending time studying in groups, and (s) attending intensive tutoring sessions run by a TA or other class assistant. In addition to these items, we shall also query students about some additional attitudinal measures that we did not adequately sample on our original instrument. These include more measures of racial vulnerability and University identification that may be revealing of the performance of minority students in particular.

We will also sample UROP and control students and supply each member of these samples with a diary that each must complete every day for an entire week. The diary will be a booklet that will be preprinted with a number of questions that must be answered each day. The questions in the diaries will mirror the items included in the behavioral survey described above. In this way, we shall be able to do a direct comparison between the two to determine the reliability of answers in each form. Having two sources of data about each behavior is an advantage over having just one.

We also will survey recent UROP alumni to try to identify the reasons for UROP's effectiveness . At the same time, we shall select a control group of students who were not in UROP, but who are contemporaries of the UROP students, who have the same majors, and who are matched with the UROP students for ethnic background and GPA. We will then contact the sample of UROP students and controls to administer a telephone survey. It will consist of a series of hierarchically organized questions that interrogate the interviewee about: (a) what the interviewee is now doing by way of school or employment, (b) whether the interviewee has had any other internships or employment since leaving Michigan, (c) whether the interviewee used a faculty member as a means to get a recommendation, (d) whether any contact is still maintained with any faculty at Michigan, (e) whether the interviewee can identify any factor that led to his/her major at Michigan, (f) whether the interviewee can recall his/her most significant course, involvement with a faculty member, influential person, and significant achievement while at Michigan, (f) what things the interviewee reads regularly that are not job-related, (g) whether the interviewee would choose to read literature that had to do with science, social science, or the humanities, (h) whether any experience at Michigan prepared the interviewee for dealing with the multicultural community, and (i) whether the interviewee participated in a research experience at Michigan (of course, the UROP students did, and we shall use this question to assess their memory for this experience).

Our plan is to take the results from these three assessment tools (the behavioral survey, the behavioral diary, and the follow-up interview of graduates) and use them to try to predict the various performance outcomes we have collected, some of which are described above. By examining several such models to predict various performance outcomes (such as GPA, retention, and course selection patterns), we hope to isolate some of the factors that have made UROP an effective aid in promoting retention and academic performance.

As we have developed results from this evaluation, we have consistently used all available avenues to disseminate our results as well as descriptions of the programmatic activities in UROP and plan to continue to do so. Examples include presentations at the 7th Annual Conference on Race and Ethnicity in New Orleans, the annual joint meeting of the Alliance for Undergraduate Education and Association of American Colleges and Universities, a meeting of the Russell Sage Foundation Workshop on Multicultural Initiatives, the FIPSE Directors Meeting, a conference at SUNY Stonybrook on undergraduate research, and the University of Toronto. Also, materials about UROP have been sent to the University of Washington, University of California, Berkeley, SUNY/Stonybrook, University of Pennsylvania, Queens College, Wayne State University, Southern Illinois University, Michigan State University, and the University of Florida. We have prepared a draft manuscript of the results of our analysis of retention effects for submission to the Journal of College Student Development, (see appendix). We plan to compose a manuscript for the Journal of Higher Education concerning the data on grade point averages and course selection patterns. Beyond these immediate plans, the data we have gathered will be subject to further analysis to investigate such issues as whether participation in UROP for academic credit results in performance changes that are different from participation for wages, whether UROP has an effect on retaining women students in the sciences, and whether UROP has resulted in attitudinal changes in the faculty who participate. These issues and others will the focus of future analyses and dissemination efforts.

At the present time, it is difficult to chart a complete course for the dissemination of our evaluation because we do not yet know the full extent of the results. We hope to isolate factors in UROP that can be informative to other institutions whether they emphasize undergraduate research or not. Not having yet isolated these factors, we cannot predict the kind of dissemination that will be most effective. We can imagine, however, that we may isolate a constellation of factors that have made UROP successful, and that this constellation may be of interest to other institutions for a variety of intervention programs that they have mounted. For example, we may discover that time spent studying in groups is an important predictor of academic success, and so we could then target dissemination efforts to other groups that focus on this and similar factors. While all of this remains to be seen, we propose to be flexible and opportunistic in developing dissemination strategies depending on the results we obtain.

Meanwhile UROP will continue to expand to meet growing student interest (last year we had 2500 applications) and refine its key components based to meet the needs of faculty, students, and administrative needs.

F. Summary and Conclusions

At present we have little basis to analyze which of the components of UROP are especially effective in promoting retention. We can, however venture that regular faculty contact provides an engaging, one-on-one relationship to foster academic competency--

computer literacy, bibliographic searchers, critical thinking, team work and substantive readings, all critical to academic integration. Students involvement in investigating, understanding, and producing knowledge serves to weave the student into the central mission of the university.

The peer advising component is another crucial part of the students research experience. In addition to the skill-building and informational usefulness of this vehicle, it also helps to bridge the gap between student's social and intellectual lives. By meeting with students individually and by leading the regular research groups in their discussions and activities, the peer advisors facilitate intellectual and social ties to the university community. These peer advisors also are someone who can help translate the norms and culture to the students, decode the mythology, pass on words of wisdom about courses, time management strategies, course selection patterns, and serve as important role models to a diverse set of students. The peer groups provide students an accessible community of peers with similar interests who can offer support, form study groups, and bring together diverse students engaged in similar academic activities. While not central to our primary goals, one of the most interesting findings is the value students in UROP place on affirmative action . Majority students in UROP vs. those in our control group are far more supportive of affirmative action. This comes from the increased contact they have with students of color in both the research setting and the research peer groups. Additionally, the peer advising system serves as a student leadership avenue for those willing to continue their participation in UROP. The combination of peer advising and the research partnerships creates a learning community which while not residential, is identifiable and serves to make a large university smaller, more intimate, and more accessible.

Of course, the results here need amplification and further study. We must identify whether students who did not persist at our university transferred to another institution. We must identify the factors and program components within UROP that lead to greater persistence. We must go beyond persistence to identify other effects that may extend from academic performance to attitudinal change. And we must investigate whether the beneficial effects of UROP are transferable to other academic environments, ones that differ from that at the University of Michigan.

We know that other universities have adopted the UROP model in diverse settings. These include Queens College, City University of New York which is a public university and a predominantly commuter school ; the University of Georgia which began a small pilot program this year in the physics and astronomy department; and the University of Wisconsin which is most similar to our institution. We have had inquiries from small liberal arts colleges interested in minority student recruitment and retention as well. The models seem to work and various program elements have been adopted. We would like to do more research into the nature of these programs so we can discuss these models in our dissemination activities.

. On a broader level, UROP has implications for the nature of undergraduate education especially at large research universities. Undergraduate student satisfaction and success at research universities not an unresolvable incongruity; in fact, Volkwein and Carbone (1994) proposed that "the most powerful undergraduate learning environments may occur in research universities that also attend to the undergraduate program." (p.163). This is echoed in a New York Times article (May 3, 1995) reporting that the head of a commission to examine the mission of research universities "envisions a climate in which undergraduates are seen as partners and faculty members are viewed as mentors who engage in common research efforts." These efforts may be sponsored research activities or collaborative activities initiated by either students or faculty . They may occur in the context of classes, independent research projects, or outside research endeavors.

G. Appendices

1. Draft Paper for Journal Submission
2. UROP Brochure
3. UROP Newsletter
4. Faculty Handbook
5. Survey Instruments

Information for FIPSE

Our experience with FIPSE has been highly variable. All the various program officers we have dealt with over the past three years have been highly supportive of our efforts, enthusiastic, interested in showcasing our project at annual meetings, referring individuals to us who were interested in exploring similar projects ect.. However, we have had a different program officer every year, on occasion more than one in a given year, and so there has been little follow-through or consistency in our experience. During the three year period we did not receive a site visit from any of our program officers. Since our project is unique in its evaluation focus, we have received assistance from Dora Marcus who has asked useful questions about our design and objectives. It would have been helpful to have a more consistent relationship and mechanisms to identify and interact with institutions exploring similar types of activities.

Given the focus of our program, retention of historically underrepresented minority students, it would have been helpful to exchange information with other institutions engaged in similar activities. The annual meetings were a regular source of frustration as they afforded little opportunity for program directors to find each other and share innovations, ideas, concerns.

In terms of programs to address the retention of diverse students at colleges and universities, our experience with UROP (and that of others like Uri Triesman) underscore the importance of projects which take non-remedial approaches to student retention. These approaches should look at ways to link students into the academic fabric of the institutions proposing them, and not be activities outside the institutions central academic focus. They should be designed to match the mission of the proposing institution , whether it be research, professional training, or liberal arts-education.

UNDERGRADUATE STUDENT-FACULTY RESEARCH PARTNERSHIPS AFFECT STUDENT RETENTION

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RUNNING HEAD: UNDERGRADUATE STUDENT-FACULTY RESEARCH PARTNERSHIPS

(submitted for publication)

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Abstract

This article evaluates the impact of a student-faculty research partnership program on the retention of first-year and sophomore undergraduates. Using a participant-control group design, results show that the partnerships are most effective in promoting the retention of students at greater risk for college attrition.

In 1993, 2.4 million students entered college; of those, some 1.1 million will leave and never receive a degree (Tinto, 1993). This is not a new trend. Data from the American College Testing Program show that the first-year attrition rate for all students in four-year public universities has remained largely unchanged over the last decade. In 1983, this rate was 29.1%; in 1992 it was 28.3% (Tinto, 1993). The other end of the undergraduate time-scale looks equally distressing: In 1983, the graduation rate at the same institutions was 52.6% while in 1992 it had declined to 46.7%. The phenomenon of college attrition is even more exaggerated among certain underrepresented minority groups. Hispanic Americans graduate at a rate of only 35%, and African Americans graduate at a rate of only 45% (Brower, 1992), far below the rates for white students (Tinto, 1993).

The causes of attrition are, of course, many in number, thereby leading to a multiplicity of efforts to increase retention that concentrate on different factors. Indeed, Tinto's (1993) model of attrition identifies a variety of factors that ought to predict attrition, in accord with the variety of issues that face students as they transit from high school through college. Broadly speaking, retention efforts that have addressed one or another of these factors can be classified into two categories. One is based on the notion that students who do not remain in school through graduation are ones who were underprepared for college work when they entered. This class of theory assigns responsibility for attrition to factors having to do with student characteristics that are usually attributed to individual deficiencies (Boykin, 1994; Levin & Levin, 1991). Responses to this perspective are typically cast in the form of remedial and tutorial programs of various sorts (Kulik, Kulik & Schwalb, 1983; Nelson, Dunn, Griggs, Primavera, Fitzpatrick, Bacilious & Miller, 1993). The second type of retention effort concentrates on structural inadequacy in meeting the needs of students so that they can remain in college through graduation. These needs are many, and consequently programs that take this perspective have typically concentrated on developing retention programs focused on financial aid, academic counseling, and personal support regimens (Kulik et al., 1983). This second class of theory, then, is built on the principle that there are various structural factors inherent in educational institutions that make them inadequately supportive of particular students, leading to significant attrition.

These two classes of theory have motivated the majority of retention efforts in higher education (see Tinto, 1993, Chapter 3 for a discussion). They are limited in scope, however, in that the first focuses solely on factors having to do with individual students and the second on factors having mainly to do with social and institutional structures. A more recent perspective on student life and student attrition concentrates on the interaction of the student with the social structure, examining such issues as the extent to which students are integrated into the fabric of the higher education institution. The emphasis is on the impact of college structure, resources, and programs on student learning and development (Volkwein & Carbone, 1994). Solutions attempt to create communities and groups that involve some changes in the situational/institutional climate while simultaneously involving students in skill and interest-building activities. Examples include living-learning and mentoring programs. Living-learning programs provide students a "home-base" in the larger college environment while mentors (students or faculty) act as "expert" guides and models in the college environment.

The principle that students must be integrated into the fabric of the institution seems to be an important one in devising retention schemes (see, e.g., Tinto, 1993), but there may be drawbacks to effecting this principle in particular ways. Living-learning programs, for example, may not be sufficiently far-reaching to integrate students into the larger college community, creating instead a smaller community that is the focus of student life, one that often does not integrate faculty well into the on-going activities. Mentoring programs often are not sufficiently high in priority in the day-to-day activities of faculty and students to be a central part of each's responsibility and interests. Consequently, they may be seen as largely peripheral to the daily life of the students whom they serve. And as Tinto (1993) observes, the evidence on student attrition suggests that efforts need to move beyond "largely a social matter for the staff of student affairs" (p. 71). A firmer implementation of the integration principle would, therefore, involve students in a focused activity that is at the heart of the institution's mission, one that counteracts feelings of social and intellectual isolation of the individual from the institution (Tinto, 1993). This would simultaneously prepare students to be successful in navigating the larger institution and aid in student's own academic development and competency.

Lack of integration, or isolation of the individual within the institution, has been identified as an important factor in contributing to student departure. The effects of weak student-with-student and student-with-faculty contact have been cited repeatedly as a cause of student withdrawal from college (e.g., Terenzini and Pascarella, 1977; Pascarella and Terenzini, 1977, 1991). Indeed, Pascarella and Terenzini (1979) cite the absence of sufficient interaction with other members of the college community as the single leading predictor of college attrition. The sort of interaction that is cited by various studies must be one that goes beyond the formal and expected environment of the classroom, however (e.g., Stage, 1989; Pascarella and Terenzini, 1977). It must include informal contact among members of the college community, contact that involves both students with students and students with faculty. It must provide this contact early in students' careers in college, at a time when they are most likely to depart (Levin & Levin, 1991). Finally, it must include contacts that foster both social and academic integration between students and the institution (Tinto, 1993).

As important as integration is for the retention of students in general, it appears to be even more important for the retention of underrepresented minority students at largely majority institutions. For African American students, for example, the amount of faculty contact is found to affect both retention (Braddock, 1981) and academic performance (Nettles, Thoeny & Gosman, 1986). Furthermore, the role of faculty contact for African American students has been found to be more critical at majority universities than at minority universities (Braddock, 1981; Fleming, 1984). It may be that faculty serve as institutional brokers for minority students at majority universities, connecting minority students to the academic and intellectual mission of the university. This may further contribute to institutional identification and a sense of belonging among minority students at predominantly majority universities. Consistent with this possibility, institutional identification is a more important factor in retention for African Americans than for other students (Astin, 1975, 1982; Sedlacek and Brooks, 1976; Tracey and Sedlacek, 1984, 1985, 1987). Furthermore, Fox (1986) found that academic integration was more salient than social integration in the success of academically and economically disadvantaged students. All of this evidence points toward the importance of institutional integration for minority students.

This study reports on an initiative that integrates students into the intellectual life of the university in a way that was designed to increase persistence. The initiative--the Undergraduate Research Opportunity Program (UROP)--builds directly on one of the key academic missions of a large, public Research I university and by design weaves students into this academic mission early in their academic careers. In a capsule sense, UROP responds to the call by Pascarella and Terenzini (1991): "Whatever form engagement might take...students should be helped early in their careers to find academic and social niches where they can feel that they are a part of the institution's life, where friendships can be developed, and where role models (whether student or faculty) can be observed and emulated." (p. 654)

Method

Program Rationale and Highlights

UROP was founded in 1989 in the College of Literature, Arts & the Sciences at the University of Michigan (a university with a 1993/94 undergraduate student population of 22,682, 3040 of whom are underrepresented minority students (AAO/OAMI, 1994)). Since its inception, UROP has enrolled 913 students. During the first three years of its existence, UROP enrolled underrepresented minority students exclusively; since the 1992-93 academic year, however, it has been open to all first-year students and sophomores within the University.

The major goal of UROP is to involve first-year and sophomore undergraduates in the research activities of the faculty at the University. Like many such programs that exist throughout colleges and universities in the country, UROP brokers intellectual relationships between faculty and students that revolve around research activities. UROP recognizes that one of the strengths of the university is its research eminence (e.g., according to the National Science Foundation (1992), it is the highest ranking public university in terms of monies spent on research, and second among all universities). With this salient fact in mind, the partnership that is intended to foster integration of students into the University community is built around one of the principal missions of the University, its research mission. In that faculty at the University place great weight on this aspect of the University's activities, integrating students into this mission places students at the heart of the faculty's interests, and thereby weaves them integrally into the fabric of the University. While there has been a burgeoning of undergraduate research programs throughout the country (Strassburger, 1995), UROP is unique in a number of ways. Table 1 highlights these distinguishing features.

[Insert Table 1 about here]

Core Program Components

The infrastructure of UROP includes a number of components that we outline below:

Student recruitment. Students are recruited for UROP either before they begin their first-year at the University, or toward the end of their first-year. The recruitment process includes direct mailings to students on campus and at home, publicity in residence halls and classes, and presentations to a variety of audiences--academic advisors, outreach programs involving high school students, and incoming student- and parent-orientation sessions. Other students come to the program via recommendations of program alumni and faculty.

Peer advising. The vast majority of students have never participated in a research project before or had close contact with a faculty mentor; thus, UROP is a novel experience for them. For this reason, the actual research partnership is supplemented by a peer advising component to smooth the transition to a new experience. Students meet monthly with peer advisors who themselves are program alumni. Students talk to the peer advisors about their on-going research, problems they encounter with their faculty partners, research skill development, time management, academic course work, and course selection. Students are also required to keep a weekly journal which provides an opportunity for self-reflection about the research experience and a means to communicate problems or issues with their peer advisors. The students write about specially assigned issues or are allowed to choose their own topics. Journal entries may also respond to topics concerning current issues, social implications of their research work, debates in their field of interest, and so on.

Peer research interest groups. Students are also assigned to research groups, with about twenty-five other students. These groups, led by the students' peer advisor, are organized around common research themes--biomedical, social science, physical science and engineering, biological and environmental science, humanities, and women-in-science. The groups allow for student networking, sharing research experiences with peers, hearing guest speakers, discussing new, interesting and controversial issues in the field, and learning more about campus resources. The group setting also allows for skill-building workshops, such as time management, computer and library skills, résumé-writing, and pursuing summer research jobs and internships.

Faculty recruitment. Faculty are recruited through direct mailings, presentations at faculty meetings, announcements on electronic mail bulletins and staff/faculty newspapers, and word of mouth. At this stage in the maturity of the program, an important component in faculty involvement is the high return rate of faculty who have participated previously. For instance, over 90% of faculty sponsors from 1992-93 returned for 1993-94 year. This high rate bespeaks of the favorable view that faculty have of the program, and enhances the word-of-mouth advertising among colleagues and other faculty.

Faculty/student matching. Students in the program are not assigned to a faculty sponsor; rather, students and faculty sponsors go through a mutual selection process. After careful examination of the "Research Projects Book," students select about six projects of interest and arrange interviews with the faculty sponsors. Students learn more about different projects so they can find a good fit, and the faculty sponsors interview and select the students with whom they would like to work.

Research presentations. During the year the students are encouraged to present their research in numerous forums. Each student is required to make a short research presentation in his/her peer research group. Two large research symposia are held each year. The Martin Luther King, Jr. Symposium--as part of the university-wide observance of Martin Luther King Jr.'s birthday--highlights multi-cultural research projects and includes presentations by faculty-student research teams. The Annual Spring Research Symposium in April includes 15 oral presentations by students and 50-60 poster presentations selected through a call for proposals. Students in the program are also encouraged to present their research at professional meetings and national undergraduate research conferences.

Academic credit and assessment. Students who participate in UROP for academic credit have a choice of either a letter grade or pass-fail notation. Students are required to complete a final project each term. In the Fall Term the students are required to submit an abstract describing the research project. At the end of Winter Term the students have the choice of preparing a final paper, oral presentation, or poster presentation about their research. The grades are based on research performance, the final project, participation in the peer research groups, the quality of their journals, and their participation in other program activities. Faculty sponsors submit grades for students' research performance and projects (80% of their overall grade) and the peer advisors submit grades for students' participation in program activities and journal writing (20% of the overall grade). The final grade is assigned by the program director.

Participants

In the present study, we investigated the impact of UROP participation on student retention. We have limited our analyses to three sub-groups of students who are represented in sufficiently large numbers for the analyses to have meaning: African American, Hispanic American, and white students.

The participants in this study were 1280 first-year and sophomore undergraduates. The experimental group consisted of 613 students who participated in UROP, while the control group was composed of 667 students who did not participate in UROP. The assignment of students to the experimental or control groups was done by a matched random assignment in the following manner. First, all students in a cohort who applied to gain entrance to UROP each year were sorted into sub-groups based on their ethnicity, SAT/ACT scores, and first-year college grades (for students participating in UROP during their sophomore year) or high school grades (for students participating in UROP during their first year in college). Second, students within each of the sub-groups were then randomly assigned to UROP or the control group for that year. Lastly, all applicants were then sent a letter indicating that there had been more applicants than there were positions in UROP, and a lottery had been held to determine entrance to the program. Students who had been selected for UROP were then told that they had succeeded in gaining entrance through the lottery, and students who were assigned to the control group were told that they had not succeeded in the lottery. In this manner, control students were not made to feel that their rejection from the program was based on qualifications of any sort, as it had not been.

Measures

The data on retention were obtained from the University's Office of the Registrar, and included demographic information (race and gender), term and year of entry, term and year of most recent active enrollment, current enrollment status, grade point average for each term, cumulative grade point average, and enrollment status by term for each student.

Retention is defined here as students' persistence through graduation, and attrition as students' departure from college. We examine only institutional departure (that is, students who left the particular university) and not system departure (those students who leave higher education entirely) (Tinto, 1993). This variable was constructed based on student's registration status by term. This is then a dichotomous variable--persisters and non-persisters. Persisters included those students who graduated or showed continuous enrollment from term of entry to Fall Term, 1994, or those who departed for a certain period of time but returned to continue their studies, that is stop-outs. Non-persisters were those students who were initially enrolled but had neither graduated nor enrolled for Fall Term, 1994. Thus, it is possible that some non-persisters may eventually return to the University to finish work toward their degree, and that some persisters will drop out before completion of theirs.

Results

This section examines the attrition rates as a function of (a) UROP participation in general; (b) UROP participation and academic performance; and (c) UROP participation and year in college.

Persistence in College

Two facts about differences in retention rates govern the analyses reported here. First, recognizing that the retention rates of minority and majority students differ at predominantly majority institutions, we separately report the retention of these two groups. The second fact has to do with retention among different groups of underrepresented minorities themselves, which are known to differ from one another (Brower, 1992; Tinto, 1993). We should note that the only two groups that are included in the student population in any substantial numbers are African Americans and Hispanic American students. We have excluded from our presentation data about Native American students who are represented in numbers too small to be informative.

When UROP participants are compared to non-participants, each race/ethnic group demonstrates a significant positive effect of participation on retention. (The university-wide data are obtained from the Office of the Registrar, 1994a). Underrepresented minority participants in UROP (from 1989-90 to 1993-94) have an attrition rate of 11.4% compared to 23.5% for non-participants. White students in UROP (from 1992-93 to 1993-94) have an attrition rate of 3.2% versus 9.8% for non-participants. There is, however, the possibility that UROP participants were more motivated in the first place to pursue career-enhancing activities than non-participants. The remaining analyses, therefore, compare UROP students to their matched control groups. These samples are restricted to African- and Hispanic American students who entered the university in Summer/Fall Terms of 1990, 1991, 1992 and 1993, and were in the experimental or control groups for program years 1991-92, 1992-93 and 1993-94, and white students who entered the university in Summer/Fall Terms of 1991, 1992 and 1993, and were in the experimental or control groups for program years 1992-93 and 1993-94.[1] To ensure that the participant and control groups were indeed similar on the randomized selection criteria, we compared the two groups on their high school grade point average and composite SAT and ACT scores. Student t-test analyses on these dimensions, as displayed in Table 2, verified that the groups exhibited no significant differences on the pre-college academic aptitude measures.

[Insert Table 2 about here]

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[1] The sample was restricted to students entering the university only in the Summer or Fall terms for two reasons: one, to provide a comparison with university-wide information from the Office of the Registrar, and two, to ensure that the students participated in the program for the full year.

The main objective of this study is to assess the impact of participation in UROP on students' persistence in college. Table 3 shows results from 2 x 2 chi-square analyses that compares the attrition rates for participants to control groups. The analysis shows a non-significant difference in attrition rate of 7.2% for all UROP students compared to 9.6% for all control group students, x^2 (1, $n = 1280$) = 1.858, $p = .17$. We then separately compared African American, Hispanic American and white students in UROP and their respective control groups. The difference in attrition rates between UROP participants and control group students is significant only for African American students; African American students in UROP have an attrition rate of just over a half of the control group. White students in UROP also show a lowered attrition rate, again about a half of their control group but this not at statistically significant. Hispanic American students in UROP have a negligibly higher attrition rate than control group students.

One might argue that the superiority in retention of African American and perhaps white UROP students compared to their controls is a function not of increased retention due to UROP, but of decreased retention of the control group students due to their rejection from UROP. On the face of it, it seems unlikely that merely being declined from a single program in college could have a dramatic effect on retention. More objectively, however, we note that each of the specific race/ethnic control groups have a lower attrition than their counterparts in the population at large, that is students who were not part of the UROP participant or control group. For African American students, the difference is marginally significant (18.3% vs. 25.2%, x^2 (1, $n = 1495$) = 3.071, $p < .08$). For Hispanic American (11.3% vs. 20.4%, x^2 (1, $n = 945$) = 22.020, $p < .00$) and white students (6.1% vs. 10.0%, x^2 (1, $n = 10,220$) = 6.705, $p < .01$), this difference in attrition rate is significantly lower. We can, therefore, be confident that the effect of UROP on retention is indeed genuine, and not attributable to a detrimental rejection effect for control group students.

We should note that the data in Table 3 are quite consistent with overall national trends in attrition. Comparing the overall attrition rates (combining UROP and control groups) among the different race/ethnic groups reveals three results: (a) attrition among African American (13.4%) and Hispanic American students (11.4%) did not differ significantly; (b) attrition rates for African American and white students differed significantly (13.4% vs. 5.0% respectively), $x^2(1, n = 1112) = 23.284$, $p = .00$; and (c) attrition rates for Hispanic American and white students also varied significantly (11.4% vs. 5.0%) $x^2 (1, n = 889) = 8.644$, $p = .00$. These results, then, are consistent with the national trend that shows varying attrition rates between majority and underrepresented minority racial/ethnic groups.

[Insert Table 3 about here]

Retention and Grade Point Average

One of the factors known to affect retention is academic success, the extent to which students are successful in their academic work at the institution (Pascarella & Terenzini, 1991; Wilder, 1983). One measure of success is student grade point average. We, therefore, examined the extent to which retention differed as a function of the cumulative grade point averages of those students. To do this, we divided the students into low- and high-GPA groups by splitting the samples approximately at the point of their median cumulative GPA. The medians (on a 4.0 scale) vary by race/ethnic group, and are: B- (2.700) for African American students, B-/B (2.850) for Hispanic American students, and B+ (3.300) for white students. Students below the median are defined as "Low-GPA" and those above the median as "High-GPA." Table 4 presents attrition data as a function of race/ethnic group, whether the students were in UROP or the control groups, and their level of academic performance. Low-GPA students as a group showed attrition of 13.5% compared to 4.3% for High-GPA students, $x^2 (1, n = 1187) = 29.60$, $p < .01$. This is consistent with the typical trend for students performing poorly to be at greater risk of attrition. Overall, Low-GPA students in UROP show a lower attrition than those in the control group (11.9% vs. 14.1%) but not significantly so, $x^2 (1, n = 549) = 0.405$, $p < .52$. The same analysis for High-GPA students reveals a parallel pattern (4.1% vs. 4.4%, $x^2 (1, n = 564) =$

0.000, $p < 1.00$). Analyses for the separate race/ethnic groups show that UROP participation impacts most positively on the retention of low-achieving African American students (attrition rate of 15.3% compared to 27.1% for the control group). None of the other results--that is comparisons among high-GPA African American, and low- or high-GPA Hispanic American and white students--approach significance.

[Insert Table 4 about here]

Retention and Year in School

Many undergraduate research programs restrict participation to students in their later years in school in contrast to UROP. One of the motivations for focusing on first- and sophomore year students in UROP was the hypothesis that intervening with students at an early point in their college careers might have a salutary effect on their retention. Table 5 displays attrition data for students who participated in UROP for the first time either in their first-year in college or as sophomores. There is almost no difference in retention overall for first year students. That is, attrition among first-year UROP students is 9.2% compared to 9.4% for control students, $x^2 (1, n = 720) = 0.001$, $p = .98$. On the other hand, the effect for sophomore students is substantial; UROP sophomores show an attrition rate of 4.3% while control group counterparts have an attrition rate of 9.5%, $x^2 (1, n = 553) = 4.963$, $p = .03$. Furthermore, African American students participating in UROP in either the first- or sophomore year show retention rates in favor of UROP compared to the control group, but the differences are not significant at this level of specificity. In the case of Hispanic American students, first-year students show no significant difference while sophomore year students show a marginally significant effect ($p = .07$). White students in UROP show a similar trend; that is, there is no appreciable effect of participation in their first-year while the difference for the sophomore year is marginally significant ($p = .10$). While none of these differences for the separate race/ethnic groups reaches conventional levels of statistical significance, it does appear that attrition overall has differential effects based on the year of participation, and that the positive effects of UROP may be more pronounced for sophomore year participants.

[Insert Table 5 about here]

Discussion

The primary finding from this research indicates that participation in the Undergraduate Research Opportunity Program increases student retention levels. In general, this effect is strongest for African American students, and for sophomores rather than first-year students. More specifically, the program appears to greatly benefit African American students whose academic performance is below the median for their race/ethnic group. And there are positive trends for Hispanic American and white students who participate in UROP during their sophomore year in college.

These data document varying effects of UROP on two different underrepresented racial/ethnic groups. This is consistent with the hypothesis that different race/ethnic groups face unique challenges on campus. For African Americans, our data indicate that UROP has a reliable effect in promoting retention, especially among the low achieving students. For these students, academic integration and institutional identification may promote a greater involvement with the academic life of the university (Sedlacek and Brooks, 1976; Astin, 1975, 1982; Tracey and Sedlacek, 1984; 1985; 1987; Fox, 1986). Related research in anthropology and social psychology points to mechanisms that may account for lower academic achievement and increased college attrition among African American students. For example, the theories of racelessness (Fordham, 1988) and college disidentification (Steele, 1992; Osborne, 1995) imply that African American students cope with peer pressure or stereotypes of academic inferiority by disassociating their racial/ethnic identity and self-esteem from their academic achievement. Although these theories remain to be empirically tested among college student populations, we can hypothesize that UROP may be an effective vehicle for preventing such disidentification and promoting academic integration; the programmatic structure provides for a positive peer and mentoring culture in the context of collaborative academic and intellectual activities.

For Hispanic American students, the challenge of integration may be a different one. Hispanic Americans find themselves "a minority within a minority." The undergraduate student population includes only 4.5% Hispanic Americans/Latino(a)s (AAO/OAMI, 1994). It is possible that such a small percentage builds for these students an isolating environment, an absence of family and community. Some authors, in fact, have suggested that a critical number of students from similar race/ethnic groups is needed to provide "safe havens" and facilitate social integration (Murguia, Padilla & Pavel, 1991; Tinto, 1993). Additionally, over half of the Hispanic American students at the University come from out-of-state (Office of the Registrar, 1994b). These students may feel a special sense of isolation from family support, and they may be more pressed by family obligations. Celis (1993) has shown that Hispanic American students are especially likely to leave college to support the family, or to transfer to institutions closer to home. Thus, a combination of a relatively small ethnic community on campus and distance from home may cause Hispanic American students to place higher priority initially on social connections and social integration. Perhaps for this reason, Hispanic American students involved in UROP during their first year show no influence on their retention. What these students may need more than academic integration at this stage in their careers is a more nurturing social environment to ease the high school-to-college transition.

We cannot yet say anything definitive about the effect of UROP on the retention of white students. Their attrition rate is sufficiently low overall that it is difficult, even with the sample size that we included in our study, to find a difference that is reliable by conventional standards. Nevertheless, we note that overall, white students in UROP had a ratio of attrition compared to their controls of approximately 1:2, and this effect is accounted for exclusively by students with relatively low GPAs. On the basis of this trend, we cautiously speculate that UROP may be an effective means of promoting academic integration among this group as well. These students, like African American students, may profit from an academic environment outside the classroom emphasizing the value of intellectual work, interactions with faculty and fellow students, and academic support.

Methodologically, the strength of this study lies in having a matched control group composed of students who applied to the program. First, the comparable high school grades, SAT and ACT scores ensure that the participant and control groups are similar on measures of pre-college academic performance. Second, the higher retention rate of control students in comparison to the general population of students across each race/ethnic group shows that the control group students do not seem to have been unduly harmed by their rejection from this program. We note, however, that this suggests the possibilty of a self-selection bias among students who apply to UROP. Thus, random assignment of applicants into participant and control group is imperative to assess the effectiveness of interventions such as UROP since motivation may not always covary with any demographic variables that are measurable.

At present, we have little basis to analyze which of the components of UROP are especially effective in promoting student retention. We can, however, venture that the regular faculty contact provides an engaging, one-on-one, relationship to foster academic competency -- computer literacy, bibliographic searches, critical thinking, team-work and substantive readings -- and academic integration. It also provides students with opportunities for continued discussion of intellectual issues and concepts outside the classroom. Most saliently, students are able to see an idea take form, come to fruition, and seed other ideas and studies. Students' involvement in investigating, understanding and producing knowledge serves to weave the students into the central mission of the university. As one anecdote by a student-participant indicates, being a part of a research setting extends students' intellectual challenges in a way that the classroom does not:

> "UROP has given me the chance to work in the real world of research and definitely feel the power and responsibilities of research. Through research, I have not only learned new techniques specific to my project, I have been able to apply my own knowledge and most importantly--critical thinking to solve problems and hypothesize outcomes of experiments. I have gained a way of thinking that cannot be taught in textbooks and learned to deal with complications which randomly arise. It has indeed broadened my horizons."

The peer advising component is another crucial part of the students' research experience. In addition to the skill-building and informational usefulness of this vehicle, it also helps to bridge the gap between students' social and intellectual lives. By meeting with students individually and by leading the regular research groups in their discussions and activities, the peer advisors facilitate intellectual and social ties to the university community. The research discussions in the groups enable students to look at their and others' research from multiple perspectives. These peer groups also provide students an accessible community of peers with similar interests while the peer advisors serve as role models and mentors, assuring students the availability of a supportive person. Additionally, the peer advising system serves as a student leadership avenue for those willing to continue their participation in UROP, albeit in a different capacity.

Of course, the results presented here need amplification. We must identify whether students who did not persist at our university dropped out of higher education entirely or transferred to another institution. We must identify the factors within UROP that lead to greater student persistence. We must go beyond persistence to identify other effects of UROP, effects that may extend from academic performance to attitudinal change. And we must investigate whether the beneficial effects of UROP are transferable to other academic environments, ones that may differ from that at the University of Michigan. These issues aside, the results presented above lead us to believe that UROP is having both a statistically significant effect on retention and a practically significant one as well.

On a broader level, UROP has implications for the nature of undergraduate education. The program provides ample evidence that it is possible to concentrate on both the educational and research mission of a university to the benefit of undergraduate students. Undergraduate student satisfaction and success at research universities is not an unresolvable incongruity; in fact, Volkwein & Carbone (1994) proposed that "the most powerful undergraduate learning environments may occur in research universities that also attend to the undergraduate program" (p. 163). This is echoed in a New York Times article (May 3, 1995) reporting that the head of a commission to examine the mission of research universities "envisions a climate in which undergraduates are seen as partners and faculty members are viewed as mentors who engage in common research efforts" (Richardson, 1995). UROP may be a vehicle to realize precisely this climate.

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Table 1. Distinguishing Features of the Undergraduate Research Opportunity Program (UROP)

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1. UROP focuses exclusively on first-year and sophomore students because this is the time in their careers when they are most at risk of attrition. Students work as research assistants in on-going projects, learning about the research and increasing their roles and responsibilities as the academic year progresses.
2. UROP enrolls students during the academic year rather than during the summer between semesters so that the research becomes an integral part of their academic life, not a separate activity conducted when they are not "in school."
3. Faculty sponsors are from all the schools and colleges of the University, ensuring students a wide range of research partnerships from which to "shop."
4. Students participate in UROP for academic credit or pay (based on financial need). Thus, UROP helps these students devote more of their non-classroom time to academic pursuits than to intellectually unchallenging jobs.
5. The research partnership is supplemented by an elaborate support system--peer advising, peer research interest groups, skill-building workshops, speakers, and research presentations.
6. UROP is not an "honors" program; average and even "marginal" students have the unique opportunity to interact with faculty in a close relationship. UROP specifically targets underrepresented minority students and women with an interest in the sciences. It has been shown repeatedly that these two groups are at special risk of attrition.
7. UROP is an integral part of the university's curricular offerings for undergraduates. Thus, it is not a marginalized addition to the array of offerings on campus, but a central feature of the opportunities that the university presents to all of its undergraduate students.
8. An essential component of UROP is its design and execution of an elaborate evaluation effort, examining program impact on student and faculty participants.

Table 2. Sample Profile on Randomized Selection Criteria

	African American Students			Hispanic American Students			White Students		
	Participant	Control	t-stat	Participant	Control	t-stat	Participant	Control	t-stat
Sample size	237	153		95	71		281	443	
High School GPA	1.871	2.040	-1.043^{ns}	1.946	2.209	-1.046^{ns}	3.669	3.682	-.481^{ns}
SAT composite	972.03	948.32	1.178^{ns}	1045.9	1076.7	-1.132^{ns}	1205.4	1205.9	-.036^{ns}
ACT composite	22.39	22.47	-.209^{ns}	25.00	25.33	-.472^{ns}	28.41	28.12	1.071^{ns}

ns = non-significant difference ($p \geq .10$ level)

Table 3. Attrition Rates of UROP Participant and Control Groups

	African American Students		Hispanic American Students		White Students	
	Participant	Control	Participant	Control	Participant	Control
Sample size	237	153	95	71	281	443
Non-persisters	24	28	11	8	9	27
Percentage Attrition	10.1	18.3	11.6	11.3	3.2	6.1
^{2}-statistic (df=1)	4.809		0.034		2.611	
p-value	.03		.85		.11	

Table 4. Attrition Rates by Academic Performance of UROP Participant and Control Groups

	African American Students		Hispanic American Students		White Students	
	Participant	Control	Participant	Control	Participant	Control
Low GPA Students	111	85	40	33	112	220
Non-persisters	17	23	8	5	4	19
Percentage attrition	15.3	27.1	20.0	15.2	3.6	8.6
χ^2-statistic (df=1)	3.396		0.054		2.220	
p-value	.07		.82		.14	
High GPA Students	115	61	49	32	146	183
Non-persisters	6	4	3	2	5	5
Percentage attrition	5.2	6.6	6.1	6.3	3.4	2.7
χ^2-statistic (df=1)	.001		0.172		.002	
p-value	.98		.68		.97	

Table 5. Attrition Rates by First-year/Sophomore Status

	African American Students		Hispanic American Students		White Students	
	Participant	Control	Participant	Control	Participant	Control
First-year Students	149	88	58	42	141	242
Non-persisters	14	15	11	4	7	16
Percentage attrition	9.4	17.0	19.0	9.5	4.9	6.6
χ^2-statistic (df=1)	2.344		1.043		0.186	
p-value	.13		.31		.66	
Sophomore Students	81	65	36	29	141	201
Non-persisters	9	13	0	4	2	11
Percentage attrition	11.1	20.0	0.0	13.8	1.4	5.5
χ^2-statistic (df=1)	1.586		3.172		2.699	
p-value	.21		.07		.10	

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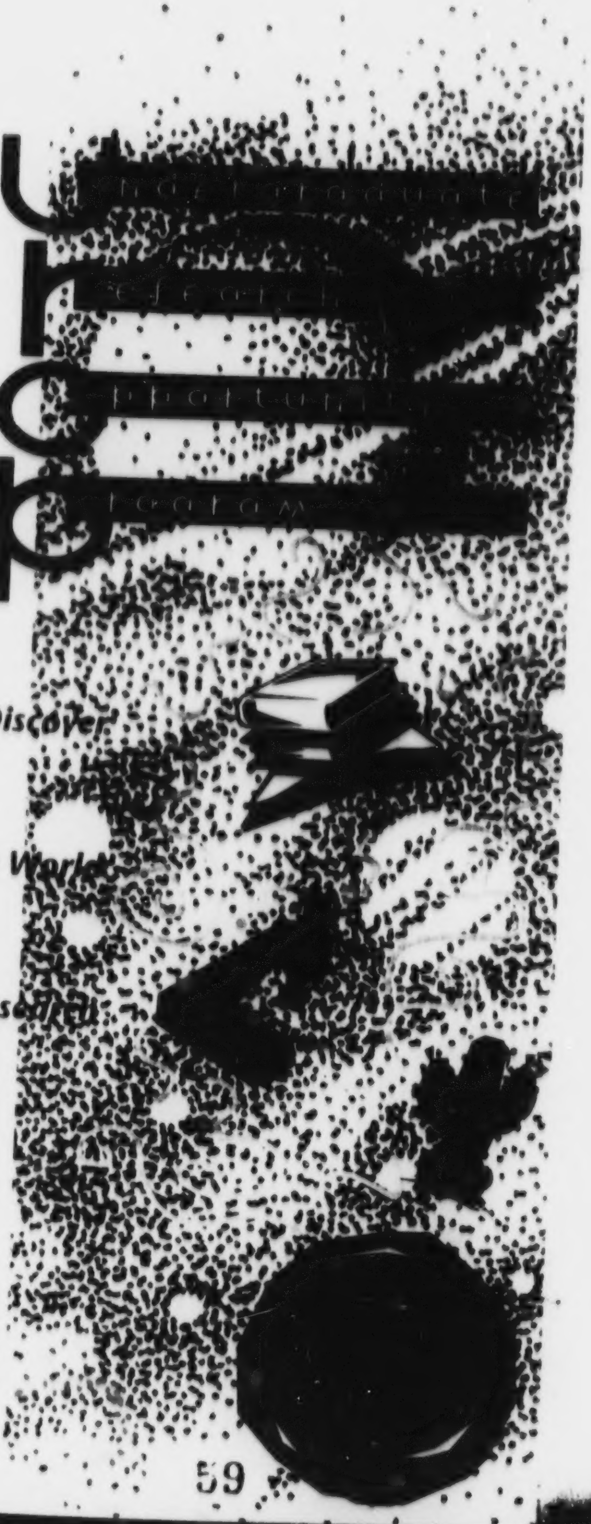

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UROP

what is urop?

The Undergraduate Research Opportunity Program (UROP) creates research partnerships between first and second year students and faculty researchers. Begun in 1989 with 14 student/faculty partnerships the program continues to grow, offering more first and second year students the opportunity to be part of an exciting research community. Today, we have 700 students and over 400 faculty researchers engaged in research partnerships.

program features

- Open only to first and second year students.
- Research Projects in most academic disciplines.
- Academic support services from peer advising to career planning workshops.
- Annual Research Symposia and guest lectures.
- Learning skills workshops (computers, library research in the information age, exploring the Internet, abstract writing, and time management).
- Summer Research Internship Database (SRID), available exclusively to UROP students.

How much time will it take up?

UROP participation is similar to taking a 3 or 4 credit hour class or having a part-time job. UROP students work an average of six to ten hours per week for the entire academic year, fall and winter terms. In addition, participants are required to attend a bi-weekly research seminar that is similar to a discussion section for a course. These seminars are organized around research themes such as social science, biomedical science, women and science, humanities, the arts, and engineering. *These seminars are held every other Wednesday evening from 6:30 to 8:00 p.m. UROP participants must include these seminars in their schedules.*

compensation

UROP participants are compensated in one of two ways: Academic Credit or Work Study (if part of your financial aid package).

Academic Credit

Students can earn 1-4 academic credits through University Course 280 in the College of Literature, Science, and the Arts or independent study credit through other schools and colleges. Students are required to work 3 hours/week/credit hour taken, to participate in research groups, keep a journal, and complete a final paper, poster or oral presentation.

Work-Study

Students whose financial aid award includes work-study can learn valuable research skills while earning work-study funds. Students typically work 10-15 hours per week based on the amount of the work-study award and the specific requirements of the research placement. Work-study students are also required to participate in the bi-weekly research peer group meetings.

benefits of urop

- Gain invaluable hands-on research experience and development of critical thinking, problem-solving, and analytical skills applicable in course work as well as research.
- Identify academic and career interests.
- Develop a collaborative, working relationship with a U-M faculty member early in your academic career.
- Acquire professional experience for future research and career opportunities.

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How do i begin my travels?

To apply for admission to UROP, you must complete an application. Applications are available in L-110 West Qua or by calling (313) 747-2768. We receive many more applications than we have spaces, so it is important to apply by the deadline. The application deadline for sophomores is March 1, 1996 and for first-year students May 15, 1996.

who can participate in urop?

Any first or second year student in good academic standing is eligible to participate in UROP. Students from historically underrepresented minority groups and women interested in science fields are especially encouraged to apply. Students must be enrolled on the Ann Arbor campus.

for more information...

Call UROP at:	(313) 747-2768
Write to:	UROP University of Michigan 580 Kennedy Drive, L-110 Ann Arbor, MI 48109-1346
E-mail:	UROP.Info@umich.edu
Web Page:	http://www.umich.edu/~urop/Home.html

UROP is partially funded by grants from the Howard Hughes Medical Institute and the Coca-Cola Foundation.

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The Regents of the University: Deane Baker, Paul W. Brown, Laurence B. Deitch, Shirley M. McFee, Rebecca McGowan, Philip H. Power, Nellie M. Varner, James L. Waters, James J. Duderstadt, *ex officio*

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urop can take you...

- To Titan, one of Saturn's many moons, to study its atmosphere in order to learn more about the past, present, and future condition of the Earth's atmosphere.
- To France at the beginning of the 20th Century, to study the inner circle of the era's most intriguing artistic and intellectual community.
- To the microscopic world of human anatomy, where you could help develop new treatments for cancer using gene therapy.
- To the outdoors to study how changing land use affects the ecological well being of landscapes and river systems.
- To the information superhighway as you construct and test high speed lasers for optical communication.
- To the biomedical laboratories, libraries, community health centers, art studios, museums, Botanical Gardens and archives of the University of Michigan campus. It can also take you to hospitals, public schools, and to Michigan's Great Lakes.

To any of these research destinations you will not go alone. You will work closely with a University of Michigan faculty researcher as well as other UROP students. All you will need to bring is enthusiasm for discovery, dedication, curiosity and a willingness to learn.

Let the Undergraduate Research Opportunity Program (UROP) be your guide to exciting and ground breaking research activities all over campus. Take advantage of one of the country's leading research institutions.

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A Year in UROP

Here is an inside look at major events in the UROP for the school year.

Summer 96 You are Accepted!!

Summer/Fall Orientation 96: Meet a UROP peer advisor to learn more about UROP and plan your academic schedule to include time for UROP.

August 96 Arrive on campus, meet your peer advisor at the UROP Open House, and attend computer and library skills workshops during Welcome Week.

September 96

Week 1 Attend an enrollment and interviewing workshop, read through the research project book, and find projects to interview for.

Week 2-4 Begin the project search with the help of your peer advisor. Interview with faculty research sponsors and find an exciting project!

Week 3 Attend Research Seminar. This is the first in a series of eight bi-weekly Wednesday evening sessions with other UROP students conducting research in your field.

October 96 You are part of a research team beginning an exciting journey of discovery.

November 96 Learn to write a research abstract.

December 96 The end of the term! Give a presentation on your research project to the group. Turn in your abstract to your faculty sponsor.

January 97 Attend the UROP Martin Luther King Jr. Research Symposium. Search SRID for summer research internships.

February 97 Continue your research and acquire new skills and knowledge.

April 97 You are now an expert on your research project. Make a presentation at the UROP Spring Research Symposium.

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CODE #:

A SURVEY OF UNDERGRADUATES AT THE UNIVERSITY OF MICHIGAN

OFFICE OF THE DEAN

COLLEGE OF LITERATURE, SCIENCE,& THE ARTS
THE UNIVERSITY OF MICHIGAN
2508 LS&A BLDG.
ANN ARBOR, MI 48109-1382

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GENERAL INSTRUCTIONS

All the questions provide specific instructions as to how to indicate your responses. Please be sure to read the instructions carefully. In general, most questions in the survey can be answered simply by marking the circle corresponding to your chosen response.
Example of the way to mark the circle:

⊗

If you change your mind or mark the wrong response, cross it out and mark the actual response clearly. Other questions may ask you to provide a written response. In such cases, please write out your response legibly in the space provided.
Please answer the questions as honestly and accurately as possible. Your answers will be kept strictly confidential.

PART I: STUDENT INFORMATION

1. Your Social Security #: ________________

2. Your sex: ① Male ② Female

3. Your racial/ethnic identification:
   - ① Black (African American)
   - ② White (not of Hispanic origin)
   - ③ Asian (incl. Pacific Islander)
   - ④ Hispanic (Latin American)
   - ⑤ Native American Indian
   - ⑥ Other (specify): ________________

4. Your year in college:
   - ① first year
   - ② sophomore
   - ③ transfer student --specify class standing at UM ________________

5. What school are you attending?
   - ① Literature, Science & Arts (LS&A)
   - ② Engineering
   - ③ Music
   - ④ Nursing
   - ⑤ Natural Resources
   - ⑥ Other (specify): ________________

6. Are you a student in:
   - ① Inteflex
   - ② Residential College
   - ③ Honors Program
   - ④ Pilot Program
   - ⑤ 21st Century Program
   - ⑥ Comprehensive Studies Program (CSP)
   - ⑦ Other (please specify): ________________
   - ⑧ none of the above

PART II: THE UNIVERSITY EXPERIENCE

7. Following is a list of reasons why some people decide to attend a particular college. How important was each of these reasons for your attendance at Michigan?

	Not at all important	Not too important	Somewhat important	Important	Extremely important
a. Good academic reputation of Michigan.	①	②	③	④	⑤
b. Value of a Michigan degree.	①	②	③	④	⑤
c. Good academic support programs (tutoring, help with writing skills, etc.).	①	②	③	④	⑤
d. Athletic and intra-mural sports programs.	①	②	③	④	⑤
e. The University of Michigan's social values—its involvement with societal concerns.	①	②	③	④	⑤
f. Social life on campus.	①	②	③	④	⑤
g. Racially and ethnically diverse student body.	①	②	③	④	⑤

8. As you think about your possible experiences at Michigan, how important is each of the following to you personally? (Many of the experiences are important, but use the categories "Very important" and "Of Crucial importance" only for those that are significantly important to you.)

	Not at all important	Not too important	Fairly Important	Very Important	Of Crucial Importance
a. Gaining a broad education and appreciation of ideas.	①	②	③	④	⑤
b. Becoming involved in fraternities and sororities.	①	②	③	④	⑤
c. Getting to know faculty, seeing and talking with them outside of class.	①	②	③	④	⑤
d. Discussing ideas, intellectual exchanges with friends and other students.	①	②	③	④	⑤
e. Being active in groups and activities reflecting my own cultural and ethnic background (such as the Black Student Union, Asian Student Coalition, Hillel, etc).	①	②	③	④	⑤
f. Being a top student academically at Michigan.	①	②	③	④	⑤
g. Gaining knowledge and skills for a career.	①	②	③	④	⑤
h. Learning about the world and gaining the knowledge and skills to make the world a better place.	①	②	③	④	⑤

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PART III: THE ACADEMIC SITUATION

9. Below are sets of words that describe some skills, values and attitudes of students.
In column 1, please check the response that represents how confident you feel about yourself in terms of skills, values and attitudes listed.

Then, in column II, indicate how important you think these skills, values and attitudes are for you to be a successful undergraduate student at UM.

	I: How confident are you of these skills, values and attitudes?				II: How important are these for you?			
	Not at all confident	Not confident	Confident	Very confident	Not at all	Slightly	Somewhat	A great deal
1. SKILLS								
a. library skills	①	②	③	④	①	②	③	④
b. research skills	①	②	③	④	①	②	③	④
c. writing skills	①	②	③	④	①	②	③	④
d. critical thinking	①	②	③	④	①	②	③	④
e. creativity	①	②	③	④	①	②	③	④
f. interpersonal skills	①	②	③	④	①	②	③	④
g. working independently	①	②	③	④	①	②	③	④
h. seeking out resources	①	②	③	④	①	②	③	④
i. leadership skills	①	②	③	④	①	②	③	④
j. keeping up with current events	①	②	③	④	①	②	③	④
k. computer skills	①	②	③	④	①	②	③	④
l. problem-solving skills	①	②	③	④	①	②	③	④
2. VALUES AND ATTITUDES								
a. hard working	①	②	③	④	①	②	③	④
b. motivated	①	②	③	④	①	②	③	④
c. knowledgeable	①	②	③	④	①	②	③	④
d. devoted to learning	①	②	③	④	①	②	③	④
e. interested in research	①	②	③	④	①	②	③	④
f. intelligent	①	②	③	④	①	②	③	④
g. resourceful	①	②	③	④	①	②	③	④
h. reliable	①	②	③	④	①	②	③	④
i. curious	①	②	③	④	①	②	③	④

10. What is your declared or possible concentration/ major? List two choices (if applicable):

Declared
Considering

a. ______________________ ① ②
b. ______________________ ① ②

7. On a scale from very unprepared to very prepared, how prepared do you feel for:

very prepared
very unprepared

a. your major (if you have chosen one)? ① ② ③ ④ ⑤
b. math courses? ① ② ③ ④ ⑤
c. science courses? ① ② ③ ④ ⑤
d. English courses? ① ② ③ ④ ⑤

11. The following questions ask you what grades you **expect** and **would like** to get when you graduate.

A. What grade do you expect to graduate with:

a. overall? ① A ② B ③ C ④ D ⑤ F
b. in your major? ① A ② B ③ C ④ D ⑤ F

B. Would you see this grade as:

a. overall? ① good ② bad
b. in your major? ① good ② bad

C. What grade would you like to graduate with:

a. overall? ① A ② B ③ C ④ D ⑤ F
b. in your major? ① A ② B ③ C ④ D ⑤ F

D. How likely is this?

very likely
maybe
very unlikely

a. overall? ① ② ③ ④ ⑤
b. in your major? ① ② ③ ④ ⑤

12. If you didn't understand something in a particular lecture or lab, what would you probably do?

very like me
very unlike me

a. Hope the information isn't important and won't be on the test. ① ② ③ ④ ⑤
b. Hope that it will become clear in later lectures or labs. ① ② ③ ④ ⑤
c. Attribute it to not having prepared or read for class. ① ② ③ ④ ⑤
d. Reread the assigned chapters or articles. ① ② ③ ④ ⑤
e. Ask the teaching assistant about it in the next section. ① ② ③ ④ ⑤
f. Ask the professor about it after the lecture or lab. ① ② ③ ④ ⑤
g. Ask the professor about it during the lecture or lab. ① ② ③ ④ ⑤
h. Worry that if I ask the professor, s/he will think I am stupid. ① ② ③ ④ ⑤
i. Worry that if I ask the professor, other students will think I am stupid. ① ② ③ ④ ⑤
j. Discuss it with a friend or relative. ① ② ③ ④ ⑤

13. If you were in danger of getting a poor overall grade in a class, what would you probably do?

very like me
very unlike me

a. Just chalk it up to lack of experience. ① ② ③ ④ ⑤
b. Try harder to bring up my GPA the next semester. ① ② ③ ④ ⑤
c. Try to do any extra credit work. ① ② ③ ④ ⑤
d. Concentrate on preparing for the final. ① ② ③ ④ ⑤
e. Study with others to prepare for the final. ① ② ③ ④ ⑤
f. Get a tutor to help prepare for the final. ① ② ③ ④ ⑤
g. Meet with the teaching assistant to prepare for the final. ① ② ③ ④ ⑤
h. Meet with the professor to prepare for the final. ① ② ③ ④ ⑤
i. Discuss it with a friend or relative. ① ② ③ ④ ⑤

14. Please try to imagine yourself in the situations that follow. If such a situation were to happen to you, what would you feel would have caused it? While events have many causes, we want you to pick only one— the major cause of this event if it happened to you.

Please write this cause in the blank provided after each event. Then we want you to answer three questions about the cause you provided. First, is the cause of this event something about you or something about other people or circumstances? Second, is the cause of this event something that will persist across time or something that will never again be present? Third, is the cause of this event something that affects all situations in your life or something that only affects this type of event?

To summarize, we want you to:

1. Read each situation and vividly imagine it happening to you.
2. Decide what you feel would be the one major cause of the situation if it happened to you.
3. Write the cause in the blank provided.
4. Answer the three questions about the cause.

(1) You cannot get all the reading done that your instructor assigns.

a. Write down the one major cause:

b. Is the cause of this due to something about you or something about other people or circumstances? (check one number)

totally ① ② ③ ④ ⑤ ⑥ ⑦ totally
due to others due to me

c. In the future, will this cause be present again? (check one number)

never ① ② ③ ④ ⑤ ⑥ ⑦ always
present present

d. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (check one number)

just ① ② ③ ④ ⑤ ⑥ ⑦ all
this situation situations

(2) You fail a final examination

a. Write down the one major cause:

b. Is the cause of this due to something about you or something about other people or circumstances? (check one number)

totally ① ② ③ ④ ⑤ ⑥ ⑦ totally
due to others due to me

c. In the future, will this cause be present again? (check one number)

never ① ② ③ ④ ⑤ ⑥ ⑦ always
present present

d. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (check one number)

just ① ② ③ ④ ⑤ ⑥ ⑦ all
this situation situations

(3) You cannot solve a single problem in a set of twenty problems assigned as homework.

a. Write down the one major cause:

b. Is the cause of this due to something about you or something about other people or circumstances? (check one number)

totally ① ② ③ ④ ⑤ ⑥ ⑦ totally
due to others due to me

c. In the future, will this cause be present again? (check one number)

never ① ② ③ ④ ⑤ ⑥ ⑦ always
present present

d. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (check one number)

just ① ② ③ ④ ⑤ ⑥ ⑦ all
this situation situations

(4) You are dropped from the university because your grades are too low.

a. Write down the one major cause:

b. Is the cause of this due to something about you or something about other people or circumstances? (check one number)

totally ① ② ③ ④ ⑤ ⑥ ⑦ totally
due to others due to me

c. In the future, will this cause be present again? (check one number)

never ① ② ③ ④ ⑤ ⑥ ⑦ always
present present

d. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (check one number)

just ① ② ③ ④ ⑤ ⑥ ⑦ all
this situation situations

(5) You cannot get started writing a paper.

a. Write down the one major cause:

b. Is the cause of this due to something about you or something about other people or circumstances? (check one number)

totally ① ② ③ ④ ⑤ ⑥ ⑦ totally
due to others due to me

c. In the future, will this cause be present again? (check one number)

never ① ② ③ ④ ⑤ ⑥ ⑦ always
present present

d. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (check one number)

just ① ② ③ ④ ⑤ ⑥ ⑦ all
this situation situations

(6) You cannot understand the points a lecturer makes.

a. Write down the one major cause:

b. Is the cause of this due to something about you or something about other people or circumstances? (check one number)

totally ① ② ③ ④ ⑤ ⑥ ⑦ totally
due to others due to me

c. In the future, will this cause be present again? (check one number)

never ① ② ③ ④ ⑤ ⑥ ⑦ always
present present

d. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (check one number)

just ① ② ③ ④ ⑤ ⑥ ⑦ all
this situation situations

15. Directly after college how likely is the possibility that you will go to graduate school (i.e. to a Ph.D. program), professional school (i.e. business, law, medical or dental school) or into a technical field?

very ① ② ③ ④ ⑤ very
unlikely likely

16. In your lifetime, how likely is the possibility that you will go to graduate school (i.e. to a Ph.D. program), professional school (i.e. business, law, medical or dental school) or into a technical field?

very ① ② ③ ④ ⑤ very
unlikely likely

17. How confident are you of your skills in designing a research project or experiment?

not very ① ② ③ ④ ⑤ very
confident confident

18. How confident are you of your ability to conduct a lab or an experiment?

not very ① ② ③ ④ ⑤ very
confident confident

19. How confident are you of your ability to work on research projects or experiments on your own?

not very ① ② ③ ④ ⑤ very
confident confident

20. How confident are you of your ability to think up creative ideas for an experiment or research project?

not very ① ② ③ ④ ⑤ very
confident confident

PART IV: SOCIAL LIFE AND INTERESTS

21. In the next section, we are interested in your social network. First, you should think of up to six of your closest friends. We do not want you to give us their actual names, so please list their initials in the space provided.

1)____________________________
2)____________________________
3)____________________________
4)____________________________
5)____________________________
6)____________________________

22. We would now like you to go back over that list of friends, and give us a little bit more information about each one. In the column labeled "friend" please write in the initials that you chose for that number on the last page. For each friend, please also indicate how long you have known this friend, where this friend lives, this friend's race/ethnicity, this friend's sex, whether or not you have the same educational goals and how often you get in touch with this friend.

Friend	How long known?	City and State in which he/she now lives	Race/Ethnicity	Sex (Male or Female)	EDUCATIONAL GOALS		How often do you talk on the phone or get together with this friend?				
					same as mine	different from mine	less than once a month	once a month	a few times a month	a few times a week	most every day
1					①	②	①	②	③	④	⑤
2					①	②	①	②	③	④	⑤
3					①	②	①	②	③	④	⑤
4					①	②	①	②	③	④	⑤
5					①	②	①	②	③	④	⑤
6					①	②	①	②	③	④	⑤

23. We would now like to ask you several questions about your social life and social environment, your goals and ideals, and how your friends feel about some of these issues.

A. Please list five of your achievements or qualities, in order of importance, that make you feel the most proud of yourself.

a) ____________________
b) ____________________
c) ____________________
d) ____________________
e) ____________________

B. Please list five people, in order of importance, whose evaluation and opinion of you is the most important to you. Also indicate their relationship to you (e.g. mother, friend from high school, etc.)

a) ____________________
b) ____________________
c) ____________________
d) ____________________
e) ____________________

C. What do you want to do for a living when you finish college?

What does your best friend want to do for a living?

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D. Please list five public figures whom you admire. When you have finished listing them, go back and write their profession/position/relationship to you (e.g. scientist, activist, leader, scholar, parent, actor, musician, etc.) and number them to indicate how much you admire them, with a 1 indicating the person you admire the most on the list. Then place a check mark next to their name if you think the majority of your close friends would include these people in their top ten list.

	Profession	Ranking	Friends choice?
a)			
b)			
c)			
d)			
e)			

E. How many school functions do you expect to go to per month? Please list academic functions (not counting classes) and social functions separately.

Academic: ① none ② 1 - 2 ③ 3 - 5 ④ 6 - 10 ⑤ more than 10

Social: ① none ② 1 - 2 ③ 3 - 5 ④ 6 - 10 ⑤ more than 10

How many school functions on average do you expect your college friends to go to per month? Please list academic functions (not counting classes) and social functions separately.

Academic: ① none ② 1 - 2 ③ 3 - 5 ④ 6 - 10 ⑤ more than 10

Social: ① none ② 1 - 2 ③ 3 - 5 ④ 6 - 10 ⑤ more than 10

F. How does it make you feel when the U. of M. wins athletic events?

don't care ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ extremely happy

How does it make your close friends feel when the U. of M. wins athletic events?

don't care ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ extremely happy

G. How would it make you feel if the U. of M. were rated as the top University in the country?

wouldn't care ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ extremely happy

How would it make your close friends feel if the U. of M. were rated as the top University?

wouldn't care ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ extremely happy

H. How much do your parents know about what your social experience in college will be like?

very little ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ very much

How much do your parents know about what your academic experience in college will be like?

very little ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ very much

How much do your parents care about what your social experience in college will be like?

very little ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ very much

How much do your parents care about what your academic experience in college will be like?

very little ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ very much

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I. How much do your close friends know about what your social experience in college will be like?

very little ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ very much

How much do your close friends know about what your academic experience in college will be like?

very little ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ very much

How much do your close friends care about what your social experience in college will be like?

very little ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ very much

How much do your close friends care about what your academic experience in college will be like?

very little ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ very much

J. Think for a moment about the decorations that you have in your room. Please list the five most important things that you have hanging on your walls or standing on your desk or shelves.

a) ____________________ d) ____________________

b) ____________________ e) ____________________

c) ____________________

K. Who do you expect to talk to about your course work when it's going well? (CHECK ALL THAT APPLY)

☐ Friends ☐ Family ☐ Faculty ☐ Nobody

Who do you expect to talk to about your course work when it's going poorly? (CHECK ALL THAT APPLY)

☐ Friends ☐ Family ☐ Faculty ☐ Nobody

L. What percentage of the time do you expect to talk about course work, whether it is going well or poorly, with different people?

Friends:	① none	② 0% - 10%	③ 11% - 25%	④ 26%-50%	⑤ 51%-75%	⑥ 76%-100%
Family:	① none	② 0% - 10%	③ 11% - 25%	④ 26%-50%	⑤ 51%-75%	⑥ 76%-100%
Faculty:	① none	② 0% - 10%	③ 11% - 25%	④ 26%-50%	⑤ 51%-75%	⑥ 76%-100%

M. Would you recommend the University of Michigan to your friends who are still in high school?

☐ Yes ☐ No ☐ Unsure

---

24. We would now like to ask you more about your race/ethnicity based on your response to Question 3. Please write down your race/ethnicity here. (If you checked more than one, please write in the one you most identify with.)

____

Use your most important racial/ethnic identification in the questions below.

1. People differ in how frequently they think about being ____________ (your racial/ethnic group) and what they have in common with people in their racial/ethnic group. How often do you think about being a member of your racial/ethnic group?

① A lot ③ Once in a while
② Fairly Often ④ Hardly ever

2. Do you think that what happens generally in this country to people in your racial/ethnic group will have something to do with what happens in your life?

① Yes, a lot ③ Yes, a little
② Yes, some ④ No

25. Below are some statements concerning academic and non-academic related interactions. Please indicate your agreement with each of the following statements.

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. When I study for an exam, I prefer to study with students of my own racial/ethnic group.	①	②	③	④
2. If I were seeking advice about my academic career, I would prefer to consult with a counselor or faculty member of my own ethnic group.	①	②	③	④
3. I am more comfortable at parties with my own ethnic group than at inter-racial and inter-ethnic parties.	①	②	③	④

If you answered White/Caucasian as your racial/ethnic identification, PLEASE GO TO Q. 27 →

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26. We would now like you to consider your membership in your racial/ethnic group and respond to the following statements on the basis of how you feel about this group and your membership in it. There are no right or wrong answers to any of these statements; we are interested in your honest reactions and opinions. Please read each statement carefully, and respond by using the following scale:

	Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree Somewhat	Agree	Strongly Agree
1. I am a worthy member of my race/ethnic group.	①	②	③	④	⑤	⑥	⑦
2. I often regret that I belong to the race/ethnic group I do.	①	②	③	④	⑤	⑥	⑦
3. Overall, my group is considered good by others.	①	②	③	④	⑤	⑥	⑦
4. Overall, my group membership has very little to do with how I feel about myself.	①	②	③	④	⑤	⑥	⑦
5. I feel I don't have much to offer to the group I belong to.	①	②	③	④	⑤	⑥	⑦
6. In general, I'm glad to be a member of the group I belong to.	①	②	③	④	⑤	⑥	⑦
7. Most people consider my group, on the average, to be more ineffective than other groups.	①	②	③	④	⑤	⑥	⑦
8. The group that I belong to is an important reflection of who I am.	①	②	③	④	⑤	⑥	⑦
9. I am a cooperative person in the group I belong to.	①	②	③	④	⑤	⑥	⑦
10. Overall, I often feel that the group of which I am a member of is not worthwhile.	①	②	③	④	⑤	⑥	⑦
11. In general, others respect the group that I am a part of.	①	②	③	④	⑤	⑥	⑦
12. The group I belong to is unimportant to my sense of what kind of a person I am.	①	②	③	④	⑤	⑥	⑦
13. I often feel I'm a useless member of my social group.	①	②	③	④	⑤	⑥	⑦
14. I feel good about the group I belong to.	①	②	③	④	⑤	⑥	⑦
15. In general, others think that the group I belong to is unworthy.	①	②	③	④	⑤	⑥	⑦
16. In general, belonging to a group is an important part of my self-image.	①	②	③	④	⑤	⑥	⑦

The next set of questions ask you about some potential difficulties that students face in college.

27. How difficult do you anticipate each of the following will be or have been for you in college?

	Very difficult	Difficult	Somewhat difficult	Not too difficult	Not at all difficult
a. Deciding on a major.	①	②	③	④	⑤
b. Feeling comfortable in the campus community—feeling as though you belong here.	①	②	③	④	⑤
c. Becoming friends with students whose views and beliefs are different from your own.	①	②	③	④	⑤
d. Becoming a part of the general campus life as far as student activities and government are concerned.	①	②	③	④	⑤
e. Being taken seriously academically—to have professors think you are capable of doing quality work.	①	②	③	④	⑤
f. Feeling comfortable with students whose racial/ethnic backgrounds are different than your own	①	②	③	④	⑤
g. Feeling on top of academics—confident of the work you can do.	①	②	③	④	⑤
h. Feeling comfortable in large classes where you may be only one of a few students of your racial/ethnic background.	①	②	③	④	⑤
i. Feeling comfortable with faculty whose racial/ethnic backgrounds are different than your own.	①	②	③	④	⑤
j. Making your way financially.	①	②	③	④	⑤

If you are male, PLEASE GO TO Q. 29 →

28. This set of questions asks about being a woman student and the challenges that women face in science settings.

A. How important is being a woman to the way you think about yourself?

① Not very important ③ Very important
② Fairly important ④ Extremely important

B. In the past, fewer women than men have pursued careers in science, mathematics or engineering. The reasons listed below have been mentioned as factors contributing to this. Based on your observations and experiences, do you think these factors constitute no problem, a minor problem, or a serious problem for the most mathematically and scientifically talented women students today? In Section I below, please indicate your opinion by placing a check in the appropriate column. Then, in Section II, please indicate whether the factor in question is or has been a problem for you.

	I			II been a problem for you?	
	No problem	Minor problem	Serious problem	Yes	No
a. Long years of formal preparation.	①	②	③	①	②
b. Possible conflicts between career and community responsibilities.	①	②	③	①	②
c. View that women majoring in the sciences or technical fields are unfeminine.	①	②	③	①	②
d. Lack of encouragement from teachers or counselors.	①	②	③	①	②
e. Lack of encouragement from family or friends.	①	②	③	①	②
f. Women students' lack of confidence that they can handle the work.	①	②	③	①	②
g. Lack of information about careers in scientific fields.	①	②	③	①	②
h. Lack of contact with people in scientific fields.	①	②	③	①	②
i. View that scientists are cold and impersonal.	①	②	③	①	②
j. Aggressive, competitive attitudes of students in science classes.	①	②	③	①	②
k. Discriminatory attitudes toward women students on the part of teachers or others in scientific fields.	①	②	③	①	②

PART V: PERSONAL WELL-BEING

The next set of questions ask you about your personal well-being, both the mental and physical aspects of your health.

29. The statements below describe different ways people think about themselves. Please read them carefully and then use the scale shown to indicate how much you agree with each of them.

	strongly disagree	disagree	agree	strongly agree
a. I feel that I'm a person of worth, at least on an equal basis with most UM students.	①	②	③	④
b. I feel that I have a number of good qualities compared to most UM students.	①	②	③	④
c. All in all, I am inclined to feel that I'm a failure.	①	②	③	④
d. I am able to do things as well as most other UM students.	①	②	③	④
e. I feel I do not have much to be proud of.	①	②	③	④
f. I take a positive attitude toward myself.	①	②	③	④
g. I am satisfied with myself, compared to most other UM students.	①	②	③	④
h. I wish I could have more respect for myself.	①	②	③	④
i. I certainly feel useless at times.	①	②	③	④
j. At times I think I am no good at all.	①	②	③	④

30. Please read each statement carefully and check the number that best describes how often you have felt this way during the past month.

During the past month:	Almost Never	Sometimes	Often	Almost always
a. I was bothered by things that don't usually bother me.	①	②	③	④
b. I felt that I could not shake off the blues even with the help from my family or friends.	①	②	③	④
c. I had trouble keeping my mind on what I was doing.	①	②	③	④
d. I felt that everything that I did was an effort.	①	②	③	④
e. I felt hopeful about the future.	①	②	③	④
f. I thought my life had been a failure.	①	②	③	④

During the past month:

	Almost Never	Sometimes	Often	Almost always
g. I was happy.	①	②	③	④
h. I felt very lonely.	①	②	③	④
i. People were unfriendly.	①	②	③	④
j. I enjoyed life.	①	②	③	④

31. When you think about yourself these days, how much of the time do you feel this way:

	Never or little of the time	Some of the time	A good part of the time	Most of the time
a. feel nervous?	①	②	③	④
b. feel irritated?	①	②	③	④
c. feel sad?	①	②	③	④

32. We would now like you to think about physical health in the past year. Please check how often each of the conditions below has happened to you in the last year:

	Never	Rarely	Sometimes	Often
a. trouble breathing or shortness of breath?	①	②	③	④
b. pains in the back or spine?	①	②	③	④
c. having trouble getting to sleep or staying asleep?	①	②	③	④
d. finding it difficult to get up in the morning?	①	②	③	④
e. find your heart pounding or racing?	①	②	③	④
f. hands sweating so that they feel damp and clammy?	①	②	③	④
g. poor appetite or having an upset stomach?	①	②	③	④
h. having headaches?	①	②	③	④

33. Please tell us what you think will make your undergraduate education at the University of Michigan a worthwhile experience.

THANK YOU FOR COMPLETING THE SURVEY

A SURVEY OF FACULTY AT THE UNIVERSITY OF MICHIGAN

Office of the Dean

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GENERAL INSTRUCTIONS

This survey concerns your experience as a faculty member at the University of Michigan. Some questions refer specifically to your contact with undergraduate students while others are about students in general. Please supply the information in the space provided or mark the circle with an "X" as shown:

⊗

Your responses will be kept confidential.
The term **"underrepresented minorities"** appears in some questions and refers only to students who are of African (Black)-, Native- or Hispanic-American origin.

PART I: FACULTY ROLE

Faculty are often expected to serve a variety of functions in an institution. We are interested in the tasks you perform as well as your personal preferences.

Q1. How many hours did you devote to each of the following activities in a typical week during the past academic year?

	less than 6 hours	6-10 hours	11-15 hours	16-20 hours	more than 20 hours	not applicable
a. Undergraduate teaching (include class preparation and student advising).	①	②	③	④	⑤	⑧
b. Graduate teaching (include class preparation and student advising).	①	②	③	④	⑤	⑧
c. Research.	①	②	③	④	⑤	⑧
d. Administrative and Committee work.	①	②	③	④	⑤	⑧

Q2. How "frequently" have you done each of the following in the past academic year?

	Not at all	Seldom	Moderately frequently	Often	Very frequently
a. Supervised junior and senior undergraduates on independent study/research projects.	①	②	③	④	⑤
b. Supervised first-year and sophomore undergraduates on independent study/research projects.	①	②	③	④	⑤
c. Supervised undergraduates as part of a research team.	①	②	③	④	⑤

Q3. About how many ...

a. undergraduate students have you worked with on your research projects in the past academic year?
① One ② Two ③ Three ④ Four ⑤ Five or more ⑥ None

b. Out of these, how many were underrepresented minority students ?
① One ② Two ③ Three ④ Four ⑤ Five or more ⑥ None

c. Out of these, how many were undergraduate women?
① One ② Two ③ Three ④ Four ⑤ Five or more ⑥ None

PART II: ACADEMIC CLIMATE

The next set of questions ask about your perceptions of the various aspects of the academic climate as it affects students. **In some questions, we ask about women in science settings; sciences here refer to the natural and physical sciences.**

Q4. Have you been teaching or taught courses in the last academic year?
① Yes ② No ➔ SKIP TO Q. 9

Q5. To what extent are the following statements true for you?

	Not at all true	A little true	Somewhat true	True	Very true
a. I am not usually interested in a student's life outside the classroom unless it interferes with his or her coursework.	①	②	③	④	⑤
b. I strongly encourage students to meet with me outside of class.	①	②	③	④	⑤
c. I enjoy interacting informally with undergraduates outside the classroom.	①	②	③	④	⑤
d. I am effective in teaching "academically underprepared" students.	①	②	③	④	⑤
e. I am effective in teaching students with different learning styles.	①	②	③	④	⑤
f. I take a special interest in the well-being of underrepresented minority students.	①	②	③	④	⑤
g. I take a special interest in the well-being of women students.	①	②	③	④	⑤

Q6. Are you teaching or have taught courses in the sciences or engineering?
① Yes ② No ➔ SKIP TO Q. 8

Q7. Compared to other students, women students in your science or engineering classes:

	Much less than other students	Somewhat less than other students	About the same	Somewhat more than other students	Much more than other students
a. Participate in class discussions.	①	②	③	④	⑤
b. Come to your office to discuss academic problems, seek extra help.	①	②	③	④	⑤
c. Come to see you about personal problems.	①	②	③	④	⑤
d. Are motivated and work hard.	①	②	③	④	⑤
e. Are academically prepared.	①	②	③	④	⑤
f. Turn in class assignments on time.	①	②	③	④	⑤
g. Attend class regularly.	①	②	③	④	⑤
h. Have the ability to do the work required in your class.	①	②	③	④	⑤
i. Work independently.	①	②	③	④	⑤
j. Work in groups.	①	②	③	④	⑤

Q8. Compared to other students, underrepresented minority students in your classes:

	Much less than other students	Somewhat less than other students	About the same	Somewhat more than other students	Much more than other students
a. Participate in class discussions.	①	②	③	④	⑤
b. Come to your office to discuss academic problems, seek extra help.	①	②	③	④	⑤
c. Come to see you about personal problems.	①	②	③	④	⑤
d. Are motivated and work hard.	①	②	③	④	⑤
e. Are academically prepared.	①	②	③	④	⑤
f. Turn in class assignments on time.	①	②	③	④	⑤
g. Attend class regularly.	①	②	③	④	⑤
h. Have the ability to do the work required in your class.	①	②	③	④	⑤
i. Work independently.	①	②	③	④	⑤
j. Work in groups.	①	②	③	④	⑤

Q9. There are several barriers that exist for underrepresented minority students in college and women students in science settings. Based on your observations and experiences, please indicate how serious each problem listed is for the respective groups. Then, in Section II, please indicate whether the factor in question is or has been a problem in your department.

	UNDERREPRESENTED MINORITIES			WOMEN IN SCIENCE			serious problem in your dept.?	
	No problem	minor problem	serious problem	No	minor	serious	Yes	No
a. Lack of role models.	①	②	③	①	②	③	①	②
b. Possible conflicts between career and family responsibilities.	①	②	③	①	②	③	①	②
c. Possible conflicts between career and community responsibilities.	①	②	③	①	②	③	①	②
d. Lack of encouragement from family or friends.	①	②	③	①	②	③	①	②
e. Discriminatory attitudes toward women on the part of teachers or others in scientific fields.	①	②	③	①	②	③	①	②
f. Time pressure and reward structures for faculty hinder mentoring of individuals from these groups.	①	②	③	①	②	③	①	②
g. Teaching styles are biased against these groups.	①	②	③	①	②	③	①	②
h. Focus on individual achievement and competition.	①	②	③	①	②	③	①	②
i. Lack of peer group opportunities since there are a small number of students from similar backgrounds.	①	②	③	①	②	③	①	②
j. Lack of opportunities for substantive out-of-class contact between faculty and students.	①	②	③	①	②	③	①	②
k. Lack of counseling and support programs.	①	②	③	①	②	③	①	②
l. Lack of on- and off-campus internship opportunities.	①	②	③	①	②	③	①	②
m. Views that students from these groups do not have the academic potential to succeed.	①	②	③	①	②	③	①	②
n. Views that the institutional climate discriminates against students from these groups and thus faculty discourage academic pursuits.	①	②	③	①	②	③	①	②

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Q10. The list below identifies difficulties that some students have at college. How difficult do you perceive these to be for incoming underrepresented minority students?

		Very difficult	Difficult	Somewhat difficult	Not too difficult	Not at all difficult
a.	Deciding on a major.	①	②	③	④	⑤
b.	Feeling comfortable in the campus community—feeling as though they belong here.	①	②	③	④	⑤
c.	Becoming friends with students whose views and beliefs are different from their own.	①	②	③	④	⑤
d.	Becoming a part of the general campus life as far as student activities and government are concerned.	①	②	③	④	⑤
e.	Being taken seriously academically—to have professors think they are capable of doing quality work.	①	②	③	④	⑤
f.	Feeling comfortable with students whose racial/ethnic backgrounds are different than their own.	①	②	③	④	⑤
g.	Feeling on top of academics—confident of the work they can do.	①	②	③	④	⑤
h.	Feeling comfortable in large classes where they may only be one of a few students of color.	①	②	③	④	⑤
i.	Feeling comfortable with faculty whose racial/ethnic backgrounds are different than their own.	①	②	③	④	⑤
j.	Making their way financially.	①	②	③	④	⑤
k.	Having role models to emulate, and for advice and guidance.	①	②	③	④	⑤

Q11. The drop-out rate for underrepresented minority students is considerably higher than for other students. In your experience, which items in Q10 (a-k) may account for underrepresented minority students dropping out of college?

Q12. In your experience, what are some reasons that underrepresented minority students successfully graduate from college?

a. ______________________________

b. ______________________________

c. ______________________________

Q13. The list below identifies difficulties that some students have at college. How difficult do you perceive these to be for incoming majority students?

		Very difficult	Difficult	Somewhat difficult	Not too difficult	Not at all difficult
a.	Deciding on a major.	①	②	③	④	⑤
b.	Feeling comfortable in the campus community—feeling as though they belong here.	①	②	③	④	⑤
c.	Becoming friends with students whose views and beliefs are different from their own.	①	②	③	④	⑤
d.	Becoming a part of the general campus life as far as student activities and government are concerned.	①	②	③	④	⑤
e.	Being taken seriously academically—to have professors think they are capable of doing quality work.	①	②	③	④	⑤
f.	Feeling comfortable with students whose racial/ethnic backgrounds are different than their own.	①	②	③	④	⑤
g.	Feeling on top of academics—confident of the work they can do.	①	②	③	④	⑤
h.	Feeling comfortable with faculty whose racial/ethnic backgrounds are different than their own.	①	②	③	④	⑤
i.	Making their way financially.	①	②	③	④	⑤
j.	Having role models to emulate, and for advice and guidance.	①	②	③	④	⑤

Q14. Which items in Q13 (a-j) may account for majority students dropping out of college?

Q15. In your experience, what are some reasons that majority students successfully graduate from college?

a. ______________________________

b. ______________________________

c.

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Q16. The list below identifies difficulties that some students have at college. How difficult do you perceive these to be for incoming women students in science or engineering settings?

Not at all difficult
Not too difficult
Somewhat difficult
Difficult
Very difficult

a. Deciding on a major. ① ② ③ ④ ⑤

b. Feeling comfortable in the campus community—feeling as though they belong here. ① ② ③ ④ ⑤

c. Being taken seriously academically—to have professors think they are capable of doing quality work. ① ② ③ ④ ⑤

d. Feeling on top of academics—confident of the work they can do. ① ② ③ ④ ⑤

e. Feeling comfortable in science classes where they may be only one of a few women students. ① ② ③ ④ ⑤

f. Feeling comfortable with male faculty. ① ② ③ ④ ⑤

g. Having role models to emulate, and for advice and guidance. ① ② ③ ④ ⑤

h. Getting personalized attention from science faculty. ① ② ③ ④ ⑤

Q17. The attrition rate for women students in the sciences or engineering has been a matter of concern in higher education. In your experience, which items in Q16 (a-h) may account for the attrition?

Any other reasons?

____

____

Q18. In your experience, what are some reasons that women in science students successfully graduate from college?

a. ______________________________

b. ______________________________

c. ______________________________

Q19. Institutions vary in their climate on campus for women students with an interest in the sciences. How would you rate the extent to which each of the following is present on or descriptive of the UM campus?

Very substantially present
Substantially present
Somewhat present
Slightly present
Not at all present

a. Concern for issues affecting women in the sciences. ① ② ③ ④ ⑤

b. Visibility and influence of women science students on campus. ① ② ③ ④ ⑤

c. The feeling on campus that most women science students are not as qualified as their men counterparts. ① ② ③ ④ ⑤

Q20. The role of women in the sciences in American colleges and universities and the responsibility of those institutions for this group is a critical issue for persons working in colleges and universities. The following are some statements representing various views or positions on this issue. Please indicate the extent to which you agree or disagree with each statement.

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree

a. Other students in the sciences are given advantages at this university that discriminate against women students. ① ② ③ ④ ⑤

b. In the long run, the greatly increased enrollment of women students in the sciences will strengthen our colleges and universities. ① ② ③ ④ ⑤

c. Since women faculty in the sciences are underrepresented, special incentives and rewards to hire them are justified. ① ② ③ ④ ⑤

d. Acting affirmatively to engage women in the sciences has helped to reduce the academic standards of the sciences in colleges and universities. ① ② ③ ④ ⑤

e. In the long run, the increased enrollment of women in the sciences will strengthen our national scientific and technological infrastructure. ① ② ③ ④ ⑤

f. Different admissions criteria and standards may be justified for women students with an interest in the sciences. ① ② ③ ④ ⑤

Q21. Below are sets of words that faculty have used to describe undergraduate students who are "valued and rewarded" in the academic environment. The first set has to do with skills and abilities of these students. The second set consists of the values and attitudes that are ascribed to them.

Each column has a question regarding "valued and rewarded" undergraduates. Please mark the response that best represents your views.

	I: How characteristic of "valued and rewarded" undergraduates are the following?				II: How characteristic of incoming under-represented minority students are the following?				III: How characteristic of incoming women students in science are the following?			
	Not at all characteristic	Slightly characteristic	Somewhat characteristic	Highly characteristic	Not at all	Slightly	Somewhat	Highly characteristic	Not at all	Slightly	Somewhat	Highly characteristic
A. SKILLS AND ABILITIES												
1. library skills	①	②	③	④	①	②	③	④	①	②	③	④
2. research skills	①	②	③	④	①	②	③	④	①	②	③	④
3. writing skills	①	②	③	④	①	②	③	④	①	②	③	④
4. critical thinking	①	②	③	④	①	②	③	④	①	②	③	④
5. creative ideas	①	②	③	④	①	②	③	④	①	②	③	④
6. good relationships with faculty	①	②	③	④	①	②	③	④	①	②	③	④
7. working independently	①	②	③	④	①	②	③	④	①	②	③	④
8. seeks out resources	①	②	③	④	①	②	③	④	①	②	③	④
9. involved in campus activities	①	②	③	④	①	②	③	④	①	②	③	④
10. keeps up with current events	①	②	③	④	①	②	③	④	①	②	③	④
11. computer skills	①	②	③	④	①	②	③	④	①	②	③	④
	Not at all characteristic	Slightly characteristic	Somewhat characteristic	Highly characteristic	Not at all	Slightly	Somewhat	Highly characteristic	Not at all	Slightly	Somewhat	Highly characteristic
B. VALUES AND ATTITUDES												
1. hard working	①	②	③	④	①	②	③	④	①	②	③	④
2. motivated	①	②	③	④	①	②	③	④	①	②	③	④
3. knowledgeable	①	②	③	④	①	②	③	④	①	②	③	④
4. devoted to learning	①	②	③	④	①	②	③	④	①	②	③	④
5. interested in research	①	②	③	④	①	②	③	④	①	②	③	④
6. intelligent	①	②	③	④	①	②	③	④	①	②	③	④
7. resourceful	①	②	③	④	①	②	③	④	①	②	③	④
8. reliable	①	②	③	④	①	②	③	④	①	②	③	④

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Q22. The role of underrepresented minorities in American colleges and universities and the responsibility of those institutions for such groups is a critical issue for persons working in colleges and universities. The following are some statements representing various views or positions on this issue. Please indicate the extent to which you agree or disagree with each statement.

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
a.	Different admissions criteria and standards may be justified for some underrepresented minority students.	①	②	③	④	⑤
b.	Other students are given advantages at this university that discriminate against underrepresented minority students.	①	②	③	④	⑤
c.	In the long run, the greatly increased enrollment of underrepresented minority students will strengthen the standards of our colleges and universities.	①	②	③	④	⑤
d.	Since African, Hispanic and Native-American faculty are underrepresented on college campuses, special incentives and rewards are justified to hire them.	①	②	③	④	⑤
e.	Due to our concern over racial injustice, colleges and universities have a primary responsibility to correct this injustice.	①	②	③	④	⑤

Q23. Institutions vary in the racial "climate" on campus, in the patterns of race relations. How would you rate the extent to which each of the following is present on or descriptive of the UM campus?

		Not at all present	Slightly present	Somewhat present	Substantially present	Very substantially present
a.	Concern for issues affecting underrepresented minority students on campus.	①	②	③	④	⑤
b.	Visibility and influence of underrepresented minority students on campus.	①	②	③	④	⑤
c.	The feeling on campus that most underrepresented minority students are not as qualified as other students.	①	②	③	④	⑤
d.	Campus efforts to promote racial understanding and respect.	①	②	③	④	⑤
e.	Support and funding for African, Hispanic and Native- American cultural events and student organizations on campus.	①	②	③	④	⑤

Q24. How much discrimination against underrepresented minorities do you feel there is in the United States today, limiting their chances to get ahead?

none at all ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ **a lot**

Q25. How much discrimination against women in the sciences do you feel there is in the United States today, limiting their chances to get ahead?

none at all ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ **a lot**

PLEASE CONTINUE ON TO Q. 26
→ → →

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PART III: PERSONAL BACKGROUND INFORMATION

Q26. What is your area of specialization and department?

① Natural Science- dept: ____________________
② Social Science- dept: ____________________
③ Humanities- dept: ____________________
④ Other (please specify): ____________________
____

Q27. What is your gender?

① Female ② Male

Q28. Age (on last birthday):

① 26-35 years ② 36-45 years
③ 46-55 years ④ 56-65 years
⑤ 66 years or older

Q29. Your race or ethnic group:

① Black/African American
② Black Other (specify national origin):
____
③ Caucasian/White (non-Hispanic)
④ Hispanic American/ Latino(a) (specify national origin):
____
⑤ Asian American (specify national origin):
____
⑥ Asian Other (specify national origin):
____
⑦ Native American/American Indian
____
⑧ Other (please specify):
____

Please feel free to write any comments in this space.

THANK YOU FOR COMPLETING THIS SURVEY
The number in the box below is your code number.

This questionnaire is individually coded for the sole purpose of data analysis.
The confidentiality of all responses will be STRICTLY observed at all times.

Your Social Security Number: ______________________

1. The questions below ask you to think about your activities during the past week at UM. Please indicate how often you did each of the following activites.

During the past week, I:	Never	Occasionally	Often	Very often
a. Participated actively in classroom discussions.	①	②	③	④
b. Led a discussion or did a presentation on some topic in a class.	①	②	③	④
c. Asked clarifications/questions in class.	①	②	③	④
d. Was late getting to class.	①	②	③	④
e. Approached professors or TAs to ask questions about course work (lectures, discussions, readings, etc.).	①	②	③	④
f. Visited or made an appointment to see a professor/TA during their office hours.	①	②	③	④
g. Thought about the practical applications of course work.	①	②	③	④
h. Asked an instructor for advice and help to improve my writing.	①	②	③	④
i. Sought out resources in a library.	①	②	③	④
j. Asked other people to read something I wrote to see if it was clear to them.	①	②	③	④
k. Explained course work to another student or friend.	①	②	③	④
l. Gave friends/other students feedback on their papers or assignments.	①	②	③	④
m. Discussed with friends issues and events that came up in my classes.	①	②	③	④
n. Had serious discussions with students whose academic interests were very different from mine.	①	②	③	④
o. Had serious discussions with students whose family background (social, economic or cultural) was very different from mine.	①	②	③	④
p. Worked in some student organization or on a special project (publications, student govt., social event, etc.).	①	②	③	④
q. Participated in some campus activities that addressed issues of diversity and multiculturalism.	①	②	③	④
r. Sought out campus resources e.g. ECB Tutors, CP&P, or academic advisors.	①	②	③	④
s. Used a system of keeping a schedule of activities (such as using a planner, scribbling notes, making lists, etc.).	①	②	③	④
t. Prioritized work when there were multiple demands.	①	②	③	④

2. Please indicate the number of hours you spent this past week on the following activities:

a. Studying ______ hrs

b. Studying in groups that you helped form ______ hrs

c. Researching or preparing for graduate/professional school or job (e.g. getting letters of recommendation, applications, studying for MCAT, GRE, etc.) ______ hrs

d. Research project/activities (include research for pay, academic credit or other) ______ hrs

3. How many faculty or graduate students do you know with whom you could have an informal 10-minute conversation? ________

4. Using the numbered scale below, please indicate your level of agreement or disagreement with each statement.

Strongly Disagree (SD) ① ② ③ ④ ⑤ ⑥ ⑦ **Strongly Agree (SA)**

a. I often feel that people's evaluations of my behavior are affected by my race.
SD ① ② ③ ④ ⑤ ⑥ ⑦ SA

b. In school situations, I worry that people will draw conclusions about my racial group based on my performance.
SD ① ② ③ ④ ⑤ ⑥ ⑦ SA

c. In school situations, I worry that people will draw conclusions about me based on what they think about my racial group.
SD ① ② ③ ④ ⑤ ⑥ ⑦ SA

d. I have a realistic chance of accomplishing my personal goals at the University of Michigan.
SD ① ② ③ ④ ⑤ ⑥ ⑦ SA

e. I have someone who will listen to me and help me if I run into problems concerning school.
SD ① ② ③ ④ ⑤ ⑥ ⑦ SA

f. I pretty much know the "ins" and "outs" of the university to do what I need to get done.
SD ① ② ③ ④ ⑤ ⑥ ⑦ SA

g. I feel comfortable on campus--feel as though I belong here.
SD ① ② ③ ④ ⑤ ⑥ ⑦ SA

h. All in all, I am satisfied with academic courses and opportunities at the University of Michigan.
SD ① ② ③ ④ ⑤ ⑥ ⑦ SA

i. All in all, I am satisfied with my academic performance at the University of Michigan.
SD ① ② ③ ④ ⑤ ⑥ ⑦ SA

PLEASE RETURN YOUR COMPLETED QUESTIONNAIRE IN THE SELF-ADDRESSED ENVELOPE PROVIDED. THANK YOU.

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CODE #: U

AN END OF YEAR SURVEY OF FIRST-YEAR AND SOPHOMORE UNDERGRADUATES AT THE UNIVERSITY OF MICHIGAN

OFFICE OF THE DEAN

COLLEGE OF LITERATURE, SCIENCE, & THE ARTS
THE UNIVERSITY OF MICHIGAN
2501 LS&A BLDG.
ANN ARBOR, MI 48109-1382

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GENERAL INSTRUCTIONS

All the questions provide specific instructions as to how to indicate your responses. Please be sure to read the instructions carefully. In general, most questions in the survey can be answered simply by marking the circle corresponding to your chosen response. Example of the way to mark the circle:

●

If you change your mind or mark the wrong response, cross it out and mark the actual response clearly. Other questions may ask you to provide a written response. In such cases, please write out your response legibly in the space provided. Please answer the questions as honestly and accurately as possible. Your answers will be kept confidential.

PART I: STUDENT INFORMATION

1. Your Social Security #: ____________________

2. Your sex: ① Male ② Female

3. Are you a student in:
   - ① Inteflex
   - ② Residential College
   - ③ Honors Program
   - ④ Pilot Program
   - ⑤ 21st Century Program
   - ⑥ Comprehensive Studies Program (CSP)
   - ⑦ other (please specify): ____________________ ____________________
   - ⑧ none of the above

4. The statements below describe different ways people think about themselves. Please read them carefully and then use the scale shown to indicate how much you agree with each of them.

	strongly disagree	disagree	agree	strongly agree
a. I feel that I'm a person of worth, at least on an equal basis with most UM students.	①	②	③	④
b. I feel that I have a number of good qualities compared to most UM students.	①	②	③	④
c. All in all, I am inclined to feel that I'm a failure.	①	②	③	④
d. I am able to do things as well as most other UM students.	①	②	③	④
e. I feel I do not have much to be proud of.	①	②	③	④
f. I take a positive attitude toward myself.	①	②	③	④
g. I am satisfied with myself, compared to most other UM students.	①	②	③	④
h. I wish I could have more respect for myself.	①	②	③	④
i. I certainly feel useless at times.	①	②	③	④
j. At times I think I am no good at all.	①	②	③	④

PART II: THE ACADEMIC SITUATION

5. The questions below ask how you feel about classes and school work. Please indicate the extent of your agreement or disagreement with each of the following statements.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
a. I feel comfortable in school.	①	②	③	④	⑤
b. I can often motivate myself when it comes to classes and school work.	①	②	③	④	⑤
c. I often get frustrated with class work.	①	②	③	④	⑤
d. School is not for everyone.	①	②	③	④	⑤
e. Good grades come easy to me.	①	②	③	④	⑤
f. Teachers have always been helpful to me if I have any problems with school.	①	②	③	④	⑤
g. Making friends is an important part of going to school.	①	②	③	④	⑤
h. I often feel that there is a lot of competition in school among the students.	①	②	③	④	⑤
i. I know what I need to do to accomplish my career goals.	①	②	③	④	⑤
j. I know how the material I am learning in school will help me accomplish my career goals.	①	②	③	④	⑤
k. I know what subjects in school are important for me to learn in order to accomplish my career goals.	①	②	③	④	⑤

6. What is your declared or possible concentration/ major? List two choices (if applicable):

		Considering	Declared
a.	______________________	①	②
b.	______________________	①	②

7. How prepared do you feel for:

		very unprepared				very prepared
a.	your major (if you have chosen one)?	①	②	③	④	⑤
b.	math courses?	①	②	③	④	⑤
c.	science courses?	①	②	③	④	⑤
d.	English courses?	①	②	③	④	⑤

8. The following questions ask you about what grades you expect and would like to get when you graduate.

A. What grade do you expect to graduate with:

a. overall? ① A ② B ③ C ④ D ⑤ F

b. in your major? ① A ② B ③ C ④ D ⑤ F

B. Would you see this grade as:

a. overall? ① good ② bad

b. in your major? ① good ② bad

C. What grade would you like to graduate with:

a. overall? ① A ② B ③ C ④ D ⑤ F

b. in your major? ① A ② B ③ C ④ D ⑤ F

D. How likely is this?

	very unlikely		maybe		very likely
a. overall?	①	②	③	④	⑤
b. in your major?	①	②	③	④	⑤

9. In the past, fewer people of color (minorities) than Caucasians (Whites) have pursued careers in science, mathematics or engineering. The reasons listed below have been mentioned as factors contributing to this. Based on your observations and experiences, do you think these factors constitute no problem, a minor problem, or a serious problem for the most mathematically and scientifically talented students today? In Section I below, please indicate your opinion by placing a check in the appropriate column. Then, in Section II, please indicate whether the factor in question is or has been a serious problem for you.

	I			II serious problem for you?	
	No problem	Minor problem	Serious problem	Yes	No
a. Long years of formal preparation.	①	②	③	①	②
b. Possible conflicts between career and community responsibilities.	①	②	③	①	②
c. View that students of color majoring in the sciences or technical fields don't ethnically identify.	①	②	③	①	②
d. Lack of encouragement from teachers or counselors.	①	②	③	①	②
e. Lack of encouragement from family or friends.	①	②	③	①	②
f. Students' of color lack of confidence that they can handle the work.	①	②	③	①	②
g. Lack of information about careers in scientific fields.	①	②	③	①	②
h. Lack of contact with people in scientific fields.	①	②	③	①	②
i. View that scientists are cold and impersonal.	①	②	③	①	②
j. Aggressive, competitive attitudes of students in science classes.	①	②	③	①	②
k. Discriminatory attitudes toward students of color on the part of teachers or others in scientific fields.	①	②	③	①	②

10. If you didn't understand something in a particular lecture or lab, what would you probably do?

	very unlike me				very like me
a. Hope the information isn't important and won't be on the test.	①	②	③	④	⑤
b. Hope that it will become clear in later lectures or labs.	①	②	③	④	⑤
c. Attribute it to not having prepared or read for class.	①	②	③	④	⑤
d. Reread the assigned chapters or articles.	①	②	③	④	⑤
e. Ask the teaching assistant about it in the next section.	①	②	③	④	⑤
f. Ask the professor about it after the lecture or lab.	①	②	③	④	⑤
g. Ask the professor about it during the lecture or lab.	①	②	③	④	⑤
h. Worry that if I ask the professor, s/he will think I am stupid.	①	②	③	④	⑤
i. Worry that if I ask the professor, other students will think I am stupid.	①	②	③	④	⑤
j. Discuss it with a friend or relative.	①	②	③	④	⑤

11. If you were in danger of getting a poor overall grade in a class, what would you probably do?

	very unlike me				very like me
a. Just chalk it up to lack of experience.	①	②	③	④	⑤
b. Try harder to bring up my GPA the next semester.	①	②	③	④	⑤
c. Try to do any extra credit work.	①	②	③	④	⑤
d. Concentrate on preparing for the final.	①	②	③	④	⑤
e. Study with others to prepare for the final.	①	②	③	④	⑤
f. Get a tutor to help prepare for the final.	①	②	③	④	⑤
g. Meet with the teaching assistant to prepare for the final.	①	②	③	④	⑤
h. Meet with the professor to prepare for the final.	①	②	③	④	⑤
i. Discuss it with a friend or relative.	①	②	③	④	⑤

12. Below are sets of words that describe some skills, values and attitudes of students. Please check the response that represents how confident you feel about yourself in terms of the skills, values and attitudes listed.

How confident are you of the following skills, values and attitudes?

	Not at all confident	Not confident	Confident	Very confident
1. SKILLS				
a. library skills	①	②	③	④
b. research skills	①	②	③	④
c. writing skills	①	②	③	④
d. critical thinking	①	②	③	④
e. creativity	①	②	③	④
f. interpersonal skills	①	②	③	④
g. working independently	①	②	③	④
h. seeking out resources	①	②	③	④
i. leadership skills	①	②	③	④
j. keeping up with current events	①	②	③	④
k. computer skills	①	②	③	④
l. problem-solving skills	①	②	③	④
2. VALUES AND ATTITUDES				
a. hard working	①	②	③	④
b. motivated	①	②	③	④
c. knowledgeable	①	②	③	④
d. devoted to learning	①	②	③	④
e. interested in research	①	②	③	④
f. intelligent	①	②	③	④
g. resourceful	①	②	③	④
h. reliable	①	②	③	④
i. curious	①	②	③	④

13. Please try to imagine yourself in the situations that follow. If such a situation were to happen to you, what would you feel would have caused it? While events have many causes, we want you to pick only one— the major cause of this event if it happened to you.
Please write this cause in the blank provided after each event. Then we want you to answer three questions about the cause you provided. First, is the cause of this event something about you or something about other people or circumstances? Second, is the cause of this event something that will persist across time or something that will never again be present? Third, is the cause of this event something that affects all situations in your life or something that only affects this type of event?

To summarize, we want you to:
1. Read each situation and vividly imagine it happening to you.
2. Decide what you feel would be the one major cause of the situation if it happened to you.
3. Write the cause in the blank provided.
4. Answer the three questions about the cause.

(1) You cannot get all the reading done that your instructor assigns.

a. Write down the one major cause:

b. Is the cause of this due to something about you or something about other people or circumstances? (check one number)

totally ① ② ③ ④ ⑤ ⑥ ⑦ totally
due to others due to me

c. In the future, will this cause be present again? (check one number)

never ① ② ③ ④ ⑤ ⑥ ⑦ always
present present

d. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (check one number)

just ① ② ③ ④ ⑤ ⑥ ⑦ all
this situation situations

(2) You fail a final examination

a. Write down the one major cause:

b. Is the cause of this due to something about you or something about other people or circumstances? (check one number)

totally ① ② ③ ④ ⑤ ⑥ ⑦ totally
due to others due to me

c. In the future, will this cause be present again? (check one number)

never ① ② ③ ④ ⑤ ⑥ ⑦ always
present present

d. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (check one number)

just ① ② ③ ④ ⑤ ⑥ ⑦ all
this situation situations

(3) You cannot solve a single problem in a set of twenty problems assigned as homework.

a. Write down the one major cause:

b. Is the cause of this due to something about you or something about other people or circumstances? (check one number)

totally ① ② ③ ④ ⑤ ⑥ ⑦ totally
due to others due to me

c. In the future, will this cause be present again? (check one number)

never ① ② ③ ④ ⑤ ⑥ ⑦ always
present present

d. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (check one number)

ust ① ② ③ ④ ⑤ ⑥ ⑦ all
this situation situations

(4) You are dropped from the university because your grades are too low.

a. Write down the one major cause:

b. Is the cause of this due to something about you or something about other people or circumstances? (check one number)

totally ① ② ③ ④ ⑤ ⑥ ⑦ totally
due to others due to me

c. In the future, will this cause be present again? (check one number)

never ① ② ③ ④ ⑤ ⑥ ⑦ always
present present

d. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (check one number)

just ① ② ③ ④ ⑤ ⑥ ⑦ all
this situation situations

(5) You cannot get started writing a paper.

a. Write down the one major cause:

b. Is the cause of this due to something about you or something about other people or circumstances? (check one number)

totally ① ② ③ ④ ⑤ ⑥ ⑦ totally
due to others due to me

c. In the future, will this cause be present again? (check one number)

never ① ② ③ ④ ⑤ ⑥ ⑦ always
present present

d. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (check one number)

just ① ② ③ ④ ⑤ ⑥ ⑦ all
this situation situations

(6) You cannot understand the points a lecturer makes.

a. Write down the one major cause:

b. Is the cause of this due to something about you or something about other people or circumstances? (check one number)

totally ① ② ③ ④ ⑤ ⑥ ⑦ totally
due to others due to me

c. In the future, will this cause be present again? (check one number)

never ① ② ③ ④ ⑤ ⑥ ⑦ always
present present

d. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (check one number)

just ① ② ③ ④ ⑤ ⑥ ⑦ all
this situation situations

14. Directly after college how likely is the possibility that you will go to graduate school (i.e. to a Ph.D. program), professional school (i.e. business, law, medical or dental school) or into a technical field?

very ① ② ③ ④ ⑤ very
unlikely likely

15. In your lifetime, how likely is the possibility that you will go to graduate school (i.e. to a Ph.D. program), professional school (i.e. business, law, medical or dental school) or into a technical field?

very ① ② ③ ④ ⑤ very
unlikely likely

16. How confident are you of your skills in designing a research project or experiment?

not very ① ② ③ ④ ⑤ very
confident confident

17. How confident are you of your ability to conduct a lab or an experiment?

not very ① ② ③ ④ ⑤ very
confident confident

18. How confident are you of your ability to work on research projects or experiments on your own?

not very ① ② ③ ④ ⑤ very
confident confident

19. How confident are you of your ability to think up creative ideas for an experiment or research project?

not very ① ② ③ ④ ⑤ very
confident confident

PART III: SOCIAL LIFE AND INTERESTS

20. In the next section, we are interested in your social network. First, you should think of up to six of your closest friends. We do not want you to give us their real names, so please list their initials in the space provided.

1) ______________________________
2) ______________________________
3) ______________________________
4) ______________________________
5) ______________________________
6) ______________________________

We would now like you to go back over that list of friends, and give us a little bit more information about each one. In the column labeled "friend" please write in the initials that you chose for that number on the last page. For each friend, please also indicate how long you have know this friend, where this friend lives, this friend's race/ethnicity, this friend's sex, whether or not you have the same educational goals and how often you get in touch with this friend.

Friend	How long known?	City in which s/he now lives?	Race/ Ethnicity	Sex (Male or Female)	EDUCATIONAL GOALS different from mine same as mine	How often do you talk on the phone or get together with this friend? less than once a month once a month a few times a month a few times a week most every day
1					① ②	① ② ③ ④ ⑤
2					① ②	① ② ③ ④ ⑤
3					① ②	① ② ③ ④ ⑤
4					① ②	① ② ③ ④ ⑤
5					① ②	① ② ③ ④ ⑤
6					① ②	① ② ③ ④ ⑤

21. We would now like to ask you several questions about your social life and social environment, your goals and ideals, and how your friends feel about some of these issues.

A. Please list five of your achievements or qualities, in order of importance, that make you feel most proud of yourself.

a) ______________________________

b) ______________________________

c) ______________________________

d) ______________________________

e) ______________________________

B. Please list five people, in order of importance, whose evaluation and opinion of you is most important to you. Please also list their relationship to you (e.g. mother, friend from high school, etc.)

a) ______________________________

b) ______________________________

c) ______________________________

d) ______________________________

e) ______________________________

C. What do you want to do for a living when you finish college?

What does your best friend want to do for a living?

D. **Please list five public figures whom you admire. When you have finished listing them, go back and write their profession/position/relationship to you (e.g. scientist, activist, leader, scholar, parent, actor, musician, etc.) and number them to indicate how much you admire them, with a 1 indicating the person you admire the most on the list. Then please place a check mark in the column marked "Friend's Choice" if you think the majority of your close friends would include these people in their top five list.**

	Profession	Ranking	Friends choice?
a)			
b)			
c)			
d)			
e)			

E. How many school functions do you go to per month? Please list academic functions (not counting classes) and social functions separately.

Academic: ① none ② 1 - 2 ③ 3 - 5 ④ 6 - 10 ⑤ more than 10

Social: ① none ② 1 - 2 ③ 3 - 5 ④ 6 - 10 ⑤ more than 10

How many school functions on average do your college friends go to per month? Please list academic functions (not counting classes) and social functions separately.

Academic: ① none ② 1 - 2 ③ 2 - 5 ④ 5 - 10 ⑤ more than 10

Social: ① none ② 1 - 2 ③ 2 - 5 ④ 5 - 10 ⑤ more than 10

F. How does it make you feel when the U. of M. wins athletic events?

don't care ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ extremely happy

How does it make your close friends feel when the U. of M. wins athletic events?

don't care ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ extremely happy

G. How would it make you feel if the U. of M. were rated as the top University in the country?

wouldn't care ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ extremely happy

How would it make your close friends feel if the U. of M. were rated as the top University?

wouldn't care ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ extremely happy

H. How much do your parents know about what your social experience in college?

very little ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ very much

How much do your parents know about what your academic experience in college?

very little ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ very much

How much do your parents care about what your social experience in college?

very little ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ very much

How much do your parents care about what your academic experience in college?

very little ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ very much

I. How much do your close friends know about what your social experience in college?

very little ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ very much

How much do your close friends know about what your academic experience in college?

very little ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ very much

How much do your close friends care about what your social experience in college?

very little ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ very much

How much do your close friends care about what your academic experience in college?

very little ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ very much

J. Think for a moment about the decorations that you have in your room. Please list the five most important things that you have hanging on your walls or standing on your desk or shelves.

a) ____________________

b) ____________________

c) ____________________

d) ____________________

e) ____________________

K. Who do you talk to about your course work when it's going well? (CHECK ALL THAT APPLY)

☐ Friends ☐ Family ☐ Faculty ☐ Nobody

Who do you talk to about your course work when it's going poorly? (CHECK ALL THAT APPLY)

☐ Friends ☐ Family ☐ Faculty ☐ Nobody

L. What percentage of the time do you talk about course work, whether it is going well or poorly, with different people?

Friends:	① none	② 0% - 10%	③ 11% - 25%	④ 26%-50%	⑤ 51%-75%	⑥ 76%-100%
Family:	① none	② 0% - 10%	③ 11% - 25%	④ 26%-50%	⑤ 51%-75%	⑥ 76%-100%
Faculty:	① none	② 0% - 10%	③ 11% - 25%	④ 26%-50%	⑤ 51%-75%	⑥ 76%-100%

M. Would you recommend the U. of M. to your friends who are still in high school?

☐ Yes ☐ No ☐ Unsure

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22. The questions below refer to more specific interactions between you and the University. Indicate your response anywhere on the scale from "a lot" to "not at all."

a lot — not at all

a. How much do you think the University and its staff are concerned about your success? ① ② ③ ④ ⑤ ⑥ ⑦

b. How much do you feel the University has made an effort to help you succeed here? ① ② ③ ④ ⑤ ⑥ ⑦

c. How much do you think the University cares about you as an individual? ① ② ③ ④ ⑤ ⑥ ⑦

d. How satisfied are you with your experience at the University? ① ② ③ ④ ⑤ ⑥ ⑦

e. How responsive is the University to your needs as an individual? ① ② ③ ④ ⑤ ⑥ ⑦

f. How much do you feel the people you meet are quick to judge you? ① ② ③ ④ ⑤ ⑥ ⑦

a lot — not at all

g. How comfortable do you feel sharing your grades with others? ① ② ③ ④ ⑤ ⑥ ⑦

h. How comfortable do you feel discussing your test performance with others? ① ② ③ ④ ⑤ ⑥ ⑦

i. How comfortable do you feel expressing and defending your opinions in class? ① ② ③ ④ ⑤ ⑥ ⑦

j. How comfortable do you feel questioning others' opinions in class? ① ② ③ ④ ⑤ ⑥ ⑦

k. How much do you feel your social background (e.g. gender, religion, race, socio-economic status) could be a source of negative judgments from others? ① ② ③ ④ ⑤ ⑥ ⑦

l. How vulnerable do you feel to negative judgments of others based on your social background? ① ② ③ ④ ⑤ ⑥ ⑦

23. A number of the following questions on diversity refer to students and people of color, that is people who are African Americans, Asian (Pacific Islander) Americans, Hispanics/Latino(a)s and Native Americans/American Indians.
The following statements are some statements representing different views about racial and ethnic diversity in the United States colleges and universities. Please indicate the extent to which you agree or disagree with each statement.

	Strongly Agree	Agree	Disagree	Strongly Disagree
a. In the long run, a greatly increased enrollment of students of color will enhance the excellence of universities.	①	②	③	④
b. Despite our concern over racial injustice, colleges and universities do not have a primary responsibility to correct the situation.	①	②	③	④
c. Different admissions criteria may be justified for some students of color.	①	②	③	④
d. Students of color are given advantages that discriminate against other students at the colleges and universities.	①	②	③	④
e. Affirmative Action for people of color, despite its underlying concern for equality, has helped reduce the academic standards of colleges and universities.	①	②	③	④
f. The University should honor the major religious holidays of groups such as Jews and Muslims as well as Christians.	①	②	③	④

24. Colleges and universities vary in "racial" climate on campus—in patterns of relations between students of color and white students. How much have you seen the following at the University of Michigan?

	little or none	some	quite a bit	a great deal
a. Racial conflict on campus.	①	②	③	④
b. Respect by white faculty for students of color.	①	②	③	④
c. Dating between students of color and white students.	①	②	③	④
d. Interracial tension in the residence halls.	①	②	③	④
e. Friendship between students of color and white students.	①	②	③	④
f. University commitment to admit more students of color and develop an environment that is conducive to their success.	①	②	③	④
g. Trust and respect between students in different groups of color.	①	②	③	④

25. We are all members of different social groups or social categories. One of such social groups is race/ethnicity. Please indicate your racial/ethnic identification. (check all that apply):

① African American/Black
② White/Caucasian (non-Hispanic)
③ Asian American/Pacific Islander
④ Hispanic American/Latino(a)
⑤ Native American/American Indian
⑥ Other (please specify):

If you checked more than one, please write in the one with which you most identify:

____

Use your most important racial/ethnic identification in the questions below.

26. People differ in how frequently they think about being ____________________ (your race/ethnic group) and what they have in common with people in their racial/ethnic group. How often do you think about being a member of your racial/ethnic group?

① A lot
② Fairly Often
③ Once in a while
④ Hardly ever

27. Do you think that what happens generally in this country to people in your racial/ethnic group will have something to do with what happens in your life?

① Yes, a lot
② Yes, some
③ Yes, a little
④ No

28. Below are some statements concerning academic and non-academic related interactions. Please indicate your agreement with each of the following statements.

	Strongly Disagree	Disagree	Agree	Strongly Agree
a. When I study for an exam, I prefer to study with students of my own group.	①	②	③	④
b. If I were seeking advice about my academic career, I would prefer to consult with a counselor or faculty member of my own group.	①	②	③	④
c. I am more comfortable at parties with my own group than at inter-racial and inter-ethnic parties.	①	②	③	④

29. We would now like you to think about your membership in your racial/ethnic group and respond to the following statements. There are no right or wrong answers to any of these statements; we are interested in your honest reactions and opinions. Please read each statement carefully, and respond by using the following scale:

	Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree Somewhat	Agree	Strongly Agree
a. I am a worthy member of my race/ethnic group.	①	②	③	④	⑤	⑥	⑦
b. I often regret that I belong to the race/ethnic group I do.	①	②	③	④	⑤	⑥	⑦
c. Overall, my group is considered good by others.	①	②	③	④	⑤	⑥	⑦
d. Overall, my group membership has very little to do with how I feel about myself.	①	②	③	④	⑤	⑥	⑦
e. I feel I don't have much to offer to the group I belong to.	①	②	③	④	⑤	⑥	⑦
f. In general, I'm glad to be a member of the group I belong to.	①	②	③	④	⑤	⑥	⑦
g. Most people consider my group, on the average, to be more ineffective than other groups.	①	②	③	④	⑤	⑥	⑦
h. The group that I belong to is an important reflection of who I am.	①	②	③	④	⑤	⑥	⑦
i. I am a cooperative person in the group I belong to.	①	②	③	④	⑤	⑥	⑦
j. Overall, I often feel that the group of which I am a member of is not worthwhile.	①	②	③	④	⑤	⑥	⑦
k. In general, others respect the group that I am a part of.	①	②	③	④	⑤	⑥	⑦
l. The group I belong to is unimportant to my sense of what kind of a person I am.	①	②	③	④	⑤	⑥	⑦
m. I often feel I'm a useless member of my social group.	①	②	③	④	⑤	⑥	⑦
n. I feel good about the group I belong to.	①	②	③	④	⑤	⑥	⑦
o. In general, others think that the group I belong to is unworthy.	①	②	③	④	⑤	⑥	⑦
p. In general, belonging to a group is an important part of my self-image.	①	②	③	④	⑤	⑥	⑦

30. Below are a number of statements referring to your most important ethnic group(e.g. African American, Latino/a American, Native American, etc.) as you indicated in question (25). Please indicate how true or untrue are the following statements for you.

	Very untrue	Somewhat untrue	A little untrue	A little true	Somewhat true	Very true
a. I try to use proper English when speaking to my teachers and white friends.	①	②	③	④	⑤	⑥
b. I am the only one or one of the few persons of my ethnic group in many of the organizations that I belong to.	①	②	③	④	⑤	⑥
c. In the United Stated everyone has the same opportunity for success.	①	②	③	④	⑤	⑥
d. I worry about what other people of my ethnic group may think of me.	①	②	③	④	⑤	⑥
e. The way I speak at home with my parents and brothers and sisters is different from the way I speak at school with my teachers.	①	②	③	④	⑤	⑥
f. I feel uncomfortable around other people ofmy ethnic group who do not seem to value the same things I do.	①	②	③	④	⑤	⑥
g. It is possible for people of my ethnic group and Whites to live together peacefully.	①	②	③	④	⑤	⑥
h. Poor people of my ethnic group are responsible for their problems.	①	②	③	④	⑤	⑥
i. For fun, I do most things that most people of my ethnic group don't.	①	②	③	④	⑤	⑥
j. Many people of my ethnic group are not discriminated against.	①	②	③	④	⑤	⑥
k. I am different than many people of my ethnic group.	①	②	③	④	⑤	⑥
l. I don't hang out in places where other people of my ethnic group in school go.	①	②	③	④	⑤	⑥
m. Many people of my ethnic group don't take advantage of the opportunities available to them.	①	②	③	④	⑤	⑥
n. For a person from my ethnic group, it's just as important to have White friends as to have friends of the same ethnic group.	①	②	③	④	⑤	⑥

	Very untrue	Somewhat untrue	A little untrue	A little true	Somewhat true	Very true
o. Prejudice against people of my ethnic group in America is the fault of a few prejudiced people, but not the whole American society.	①	②	③	④	⑤	⑥

31. The list below identifies difficulties that some students have at college. How difficult have these been for you in the past year?

	Very difficult	Difficult	Somewhat difficult	Not too difficult	Not at all difficult
a. Deciding on a major.	①	②	③	④	⑤
b. Feeling comfortable in the campus community—feeling as though I belong here.	①	②	③	④	⑤
c. Becoming friends with students whose views and beliefs are different from my own.	①	②	③	④	⑤
d. Becoming a part of the general campus life as far as student activities and government are concerned.	①	②	③	④	⑤
e. Being taken seriously academically—to have professors think I am capable of doing quality work.	①	②	③	④	⑤
f. Feeling comfortable with students whose racial/ethnic backgrounds are different than my own.	①	②	③	④	⑤
g. Feeling on top of academics—confident of the work I can do.	①	②	③	④	⑤
h. Feeling comfortable with faculty whose racial/ethnic backgrounds are different than my own.	①	②	③	④	⑤
i. Making my way financially.	①	②	③	④	⑤

32. Please read each statement carefully and check the number that best describes how often you have felt this way during the past month.

During the past month:	Almost Never	Sometimes	Often	Almost always
a. I was bothered by things that don't usually bother me.	①	②	③	④
b. I felt that I could not shake off the blues even with the help from my family or friends.	①	②	③	④
c. I had trouble keeping my mind on what I was doing.	①	②	③	④
d. I felt that everything that I did was an effort.	①	②	③	④
e. I felt hopeful about the future.	①	②	③	④
f. My sleep was restless.	①	②	③	④
g. I was happy.	①	②	③	④
h. I felt very lonely.	①	②	③	④
i. People were unfriendly.	①	②	③	④
j. I enjoyed life.	①	②	③	④
k. I felt sad.	①	②	③	④

Thank you for completing the questionnaire. Please feel free to write down any comments you wish in this space.

UROP NEWS

Summer 1995

UROP NEWS
SUMMER EDITION

WELCOMES FROM AROUND THE UNIVERSITY

A SPECIAL PULLOUT STUDENT HANDBOOK

WHAT YOU SHOULD EXPECT FROM FACULTY RESEARCH SPONSORS

Dear Student:

Welcome to the Undergraduate Research Opportunity Program. This year close to 800 students and 400 faculty will participate in our community of student and faculty researchers. I hope participating in UROP will be the academic highlight of your year. This is the first in a year long series of newsletters. I encourage you to read this issue and future issues for important program information, news about funding and travel opportunities, helpful hints, and important dates. I also encourage you to submit an article about your research to the newsletter.

In this issue, you will find words of wisdom from President Duderstadt, Vice President for Research Homer Neal, Suzanne Tainter, a science writer for Research News, and UROP faculty sponsors about how to get the most out of your UROP experience. There is also important information about the dates, times, and locations of the enrollment workshops and information on how to find a research project.

UROP is not only a chance to "do research," but an opportunity to meet faculty outside the classroom, work with students engaged in similar research projects, and learn your way around the university. It is also a valuable way to explore learning outside the traditional classroom setting and participate in creative and groundbreaking research. I hope the research skills you develop and knowledge you gain will benefit you both inside and outside the classroom.

All of us involved in UROP have high expectations for you. I hope you will be an active researcher, ask questions, read articles about your research topic, participate actively with the research team, and attend your research peer group meetings.

Have a good and productive year. Stop by my office when you have the time. I look forward to meeting you and learning about your UROP experience.

Sincerely,
Sandra Gregerman
Director

Welcome to the Research Community of the University of Michigan

MISSION OF UROP

The mission of UROP is to improve the retention and enrich the academic experience of undergraduate students during their first and second years at the University of Michigan. To do this, UROP develops research partnerships between first and second year students and faculty sponsors which are beneficial for both parties; students gain hands on experience in a field of their interest, and faculty gain the benefits of becoming a mentor to motivated students. In addition, UROP provides on-going academic support services through its peer advising program and research peer groups creating a student research community.

GOALS

To engage first and second year students in original research projects.

To facilitate successful research partnerships that are mutually beneficial to both the student and faculty sponsor.

To develop creative and rewarding program activities for all students enrolled in the program.

To create a community of student researchers by providing educational enrichment activities and opportunities for students to interact, network, socialize and collaborate together.

To promote and expand opportunities for undergraduate research throughout a student's undergraduate years.

Welcomes From Around the University

From President Duderstadt:

Dear UROP Researcher,

Welcome to UROP. You are about to participate in one of the most exciting opportunities available at the University of Michigan, the chance to do original research at one of the world's outstanding research universities. UROP faculty mentors, who come from all academic disciplines, are leaders in their fields. Faculty members volunteer to participate in UROP because they appreciate the contributions undergraduates can and do make to their research programs and because they enjoy working with first- and second-year students. Guided by your faculty mentor, you will learn to think and work as a researcher. You also will get to know your faculty and peer mentors and other UROP students as friends and colleagues.

I congratulate you for embracing this new challenge and predict that you will look back upon your UROP experience as a highlight of your undergraduate years at Michigan.

James J. Duderstadt
President

BEST COPY AVAILABLE

From Vice President Neal:

Dear UROP Researchers:

It is my privilege to welcome you to the University of Michigan (or back to the University, as the case may be) — and more specifically to the Undergraduate Research Opportunity Program.

The University of Michigan is one of the world's leading institutions of research, scholarship and creative activity. We can claim a remarkable breadth and diversity of activity — breadth that has, indeed, helped make the University the leading public university in the nation, in terms of volume of expenditures on research. We can also claim a tremendous tradition of excellence in research, scholarship and creative activity. There is not room in this space to list any more than a minute fraction of the world-changing discoveries, inventions, theories and ideas that have come out of U-M during its distinguished history — but even a brief list is illustrative. All of the following were accomplished here, or were accomplished by University of Michigan faculty, staff or students working at research facilities elsewhere (the leading faculty member's name is given in parentheses):

- verification of the effectiveness of the Salk polio vaccine (and, I might add, Salk did some of his earliest work toward development of the vaccine as a UM research scientist)
- invention of 3-dimensional holography (Emmet Leith et al.)
- composition of the Pulitzer-Prize winning work, "Twelve New Etudes for Piano" (William Bolcolm)
- discovery of the genetic causes of sickle-cell anemia (James Neel)
- development of the "Michigan Model" for Economic Forecasting (various faculty)
- discovery of optical harmonics, the phenomenon that underlies modern technologies ranging from grocery-check-out scanners to sensors and detectors of many kinds (Peter Franken et al.)
- seminal study of the evolution of complex societies (Henry Wright)
- invention of the ruby maser (Chihiro Kukuchi)
- discovery of the genes for cystic fibrosis and neurofibromatosis (Francis Collins)
- first use of human gene therapy (James Wilson)
- discovery of whale fossils proving that whales evolved from land-based mammals that returned to the sea (Philip Gingerich)
- compilation of the Middle English Dictionary — the definitive compilation of English language and culture for the period 1100 to 1500 A.C.E., and probably the most comprehensive work of its kind for any period of culture (numerous faculty)
- invention of the liquid bubble chamber for particle detection in nuclear and high energy physics (Donald Glaser)
- discovery of proton spin, helping to complete the early "Bohr model" of the atom (David Dennison)
- development of leading theories of ethics (William Frankena)
- invention of fiber optics (C. Wilbur Peters)

This list — which, I stress again, represents only a very small sample — is indicative of an intellectual tradition of the highest order. It is a tradition that our faculty continue to aspire to and to live up to.

In entering the Undergraduate Research Opportunity Program, you have made the decision to become directly involved in this part of the University; you have decided to become a member of the community of inquiry and creativity that produced all of the wonderful results that I just mentioned — and many more.

continued on next page...

"WILBUR PETERS, THE PROFESSOR OF PHYSICS WHO LED THE EFFORT THAT CREATED THE FIRST COHERENT FIBER-OPTICAL DEVICE, HERE AT THE UNIVERSITY IN THE 1950S, CREDITED HIS UNDERGRADUATE RESEARCH ASSISTANT, LAWRENCE CURTISS, WITH A NUMBER OF THE KEY INSIGHTS AND TECHNICAL BREAKTHROUGHS THAT MADE THE EXPERIMENT A SUCCESS. (MR. CURTISS, INCIDENTALLY, WENT ON AFTER GRADUATION TO FOUND HIS OWN VERY SUCCESSFUL COMPANY TO EXPLOIT THE NEW TECHNOLOGY.)"

HOMER A. NEAL

continued from previous page...

In doing this, you also are upholding a fine tradition, for indeed, undergraduate students have always been important members of the community; your predecessors at this University have played a part in more than one of the discoveries listed above. To give just one example from my own discipline, physics: Wilbur Peters, the professor of physics who led the effort that created the first coherent fiber-optical device, here at the University in the 1950s, credited his undergraduate research assistant, Lawrence Curtiss, with a number of the key insights and technical breakthroughs that made the experiment a success. (Mr. Curtiss, incidentally, went on after graduation to found his own very successful company to exploit the new technology.)

It is entirely possible that one of you, in the year ahead, will play a role in a similarly remarkable discovery. Even if your work does not have such a singular impact—and indeed, very few of us in the research community can claim that degree of singularity—if you pursue your work with conscientiousness and joy, you will indeed make a contribution to the advancement of inquiry or to the creation of cultural value, and of this you will have every right to be exceedingly proud. You will have learned about the world, and maybe even about yourself, in a way that simply cannot be duplicated in the classroom.

I wish you much enjoyment and success.

Sincerely,
Homer A. Neal
Vice President for Research

From Science Writer, Suzanne Tainter:

Welcome to the world of research.

As a writer about research at the University of Michigan, I talk to faculty from many diverse areas about what they do. Their excitement about their work is contagious. Often, as I complete my research for an issue of the magazine, I think, "Maybe I should give up writing and pursue studies in... (insert in this blank whatever field I've last been interviewing researchers about!)"

Through UROP, you are about to embark on experiences that I and many other people would envy — actually working along side researchers, learning first hand how they go about doing their work. You will venture into territory that is new—where the answers aren't in the back of the book. You will wrestle with new ideas. You will gain valuable skills, as well as make many friends.

As in all things, what you get out of the experience depends on what you put into it. Jump right in. Ask what you can do. Ask questions about anything you are unsure of or curious about. Don't worry about looking dumb. No one expects you to know everything about how to do this research—that is what this experience is all about. Be bold. Get involved.

What makes the University of Michigan different from many other colleges you might have gone to is the blend of research with teaching that faculty members undertake. You, too, are now part of this research community. Enjoy!

Suzanne Tainter
Science Writer
Research News

What You Should Expect From Faculty Research Sponsors

Marita Inglehart

Although you may have no idea what to expect when you enter the world of undergraduate research, our faculty research sponsors had some ideas of what they thought you should expect from them. We contacted faculty research sponsors from various fields of study and here's what they said......

When I think about "What students should expect from their faculty mentors in research" the first thing that comes to my mind is time. Time to explain to the students what they do in their research and how they do it; time to answer questions from the students and time to listen to the student's concerns and ideas. For a faculty person that might be the most valuable thing they can give, because we all are short of time.

What I also hope a student gets from working with a faculty is to gain an understanding of what the daily life of a faculty member looks like and how the "business" of science works. With this I mean that the student should get a basic understanding not just of how research is done, but also what it takes to raise funds to do the research, what you do to present research to the scientific community (how do you get papers accepted at conferences and in journals?) and how you integrate teaching, research and service in one busy life. Role modeling is a term that comes to my mind in this context.
I hope these thoughts are not too abstract.

Marita Inglehart
Associate Professor of Dentistry
Adjunct Associate Professor of Psychology

continued on next page ...

UROP
NEWS
Fall 1995

UROP Student Handbook

PULL-OUT-SECTION

STUDENT HANDBOOK CONTENTS

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PEER GROUP SYLLABUS

ACADEMIC CALENDAR

UROP STAFF INFORMATION

Benefits of UROP

Gaining practical experience in your field of interest or in another field allows you to recognize the satisfaction and frustration of work in a specific field, this may help you make more effective career and academic decisions. Participating in UROP has many benefits:

Independence

When you succeed at a job and learn new skills, you acquire a sense of responsibility, self-confidence, and independence.

Exposure to new experiences

The wider the variety of experiences you have in life, the more interesting you will be.

New friendships

Working on a research team allows you to meet other students with similar interests, as well as meet students from different backgrounds.

Work Experience

UROP gives you real work experience: supervisor relationships, cooperating with coworkers, and communicating with diverse individuals.

Working with Faculty

Working with a faculty mentor can lead to a long and beneficial academic relationship.

Program Requirements

Research Peer Groups

You will be assigned to a research peer group according to your area of interest. Each group consists of approximately thirty students. Attending peer groups is mandatory and can only benefit you. Research peer groups are designed to promote networking among students, to develop skills in academic and professional areas, and to enhance students' knowledge of prevalent issues in a specific academic discipline. Group meetings will be conducted by your peer advisor. Suggestions about topics for peer groups are encouraged. It is important that you give your peer advisor feedback about the group meetings. Remember that these are for your benefit, therefore your input is valuable. Meetings are alternate Wednesdays from 6:30-8:00 P.M. beginning September 6, 1995.

Peer Advisor Appointments

You are required to meet monthly with your peer adviser. If needed, students may come in to see their peer advisor at any time. These appointments help us make sure your research project is progressing well. These appointments also give you a chance to interact with your peer advisor on a more personal and private level. Appointments are informal and are usually conducted in L-116 West Quad. Your peer advisor is a resource for you, take advantage of these appointments.

To schedule an appointment, call: 747-2768.

Journals

As a UROP participant, you are required to keep a research journal. Journals are a forum for personal interaction between you and your peer advisor, and a way for you to reflect upon your research experiences. Journal topics may be assigned by your peer advisor or you may choose to write on topics you suggest. Responses will be collected and returned to you with feedback. Each response should be at least 1 page in length. Journals should be used to express concerns, suggestions, reflections or any ideas you may have.

Term Projects

Your faculty sponsor should assign you a "final project" at the end of each term. It is recommended that you complete a research abstract for the first term and a paper, oral, or poster presentation for the second term. These projects are an important tool to measure what you have learned and to gain practice writing about research.

•Reminders•

Attend individual peer advisor meetings according to the guidelines established by your peer advisor and outlined in the contract.

Attend bi-weekly research peer group meetings.

Attend receptions, workshops, symposia and other events sponsored by UROP.

Participation in UROP

Academic Credit

Students in UROP can participate in the program for academic credit or work-study funding if it is part of your financial aid package. If you are participating for academic credit you will enroll in one of the following courses depending upon your school or college.

College of Literature Science and the Arts

UC 280

This course can be taken for 1-4 credits. Credit is based on hours worked. For each 3 hours of work per week, you will receive 1 credit. You have an option of taking this course for a letter grade or pass/fail. A maximum of 8 credits will be counted towards graduation.

College of Engineering

Engineering 195
(various sections)

This course can be taken for 1-4 credits and was created for engineering students participating in UROP engineering projects. For each 3 hours of work per week, you will receive 1 credit. You will receive a letter grade for this course.

Art, Engineering, Music, Natural Resources and Environment, or Division of Kinesiology Students

If you are in any one of these units, you have the option of registering for UC 280 or signing up for independent study credit through your school or college if your research project is in that school or college.

Credit Grading Procedure

Students participating in UROP for academic credit will be graded according to the criteria listed below. Faculty sponsors will grade students on #1 and #2, which will be 80% of your grade. UROP staff will keep track of #3, which will be the equivalent of 20% of your grade.

1. Research Performance: How well did you perform your research tasks? Did you have good attendance? Did you follow-through on assignments?

2. Final Paper or Project: Quality of work, understanding of topic.

3. Participation in other UROP required activities (journals, attendance at research peer groups): Level of participation, attendance.

Work-Study

If you have been awarded work-study as part of your financial aid package, you may participate in UROP for an hourly rate of $6.50. If you have a $1000 work-study award, you will have to work an average of 12 hours/week.

Requirements & Responsibilities

As a work-study student there are certain responsibilities that you have to the program, the University, and to yourself. When you sign temporary employment forms, you are agreeing to abide by the rules of the department to which you are employed. UROP has certain rules and regulations that must be adhered to in order to continue employment.

If you are participating in UROP for academic credit there are also certain responsibilities you must adhere to in order to insure a passing grade and continue participation in the program.

As a UROP participant for work-study or academic credit, you are required to:

1. Submit a UROP contract signed by you and your faculty researcher.

2. Complete temporary employment forms, if you are work-study or get an electronic override and register into the appropriate course if you are an academic credit student.

3. Attend individual peer advisor meetings according to the guidelines established by your peer advisor and outlined in the contract.

4. Complete pre-and post-program surveys and participate in all other evaluation activities.

5. Submit signed credit or work-study timesheets to the UROP office on a bi-weekly basis. **These will not be accepted without the signature of your faculty sponsor or another authorized signer.** TIMESHEETS SHOULD BE FILLED OUT IN BLACK INK. (*See Note)

6. Submit journals according to the guidelines established by your peer advisor.

7. Attend bi-weekly research peer group meetings.

8. Attend receptions, workshops, symposia and other events sponsored by UROP.

9. Complete a final project each term according to the guidelines set forth by your faculty sponsor.

10. Notify the UROP office of any changes in address, phone number, class schedule, research project, etc.

11. Report to work as scheduled, notify your supervisor if you are ill and cannot work.

***Note:** Any attempts to defraud the University and UROP will be dealt with appropriately. If you receive improper payment for hours not worked, please notify the UROP office immediately. Disciplinary action will be taken in cases of intentional fraud.

Finding A ResearchProject

Finding A Research Project

What you choose for your research project will determine what you learn and the quality of your experience. Finding a project can be a bit stressful during the hectic first few weeks of school, but if you keep the following tips in mind, your search will help you find what you want.

1) Stay calm. You will find a project; it is just a matter of time and searching.

2) Really think about what you want to and are willing to do for your research project. Make a list of skills you want to gain and those you already have and compare these with those listed on the Project Information Sheets. Use it as one way to determine which projects you are suited for.

3) Keep an open mind and be willing to apply for projects outside your area.

4) Don't be intimidated by the prerequisites for a project. As long as you are willing to learn new skills and indicate that on your resume, you are probably eligible for the project. If you like a project, don't let anything keep you from applying for it.

5) Read the project description thoroughly.... in fact, research the project.. find out about the professor, his/her reputation, who would supervise you, how many hours you would work, what the work entails: library work, lab work, writing etc???

6) Set up interviews with 5 or 6 projects you like. Use the interview as an opportunity for you to get to know the faculty advisor and vice versa. You can do this by asking questions and clearly stating what your interests are.

7) Wait to hear that you have been accepted by a few projects before deciding which one to work on. However, if you are accepted by the first project you interview with and that is your favorite—
go for it!!

Checklist for Finding a Research Project

In order to obtain a UROP research position you will set up interviews with faculty researchers. To do this you will need to do some research...

Decide in which area(s) you might like to do research. It is not necessary to choose a project from within your concentration, school, or college.

Look through the Research Project Directory available at the Enrollment Workshop and the UROP office Monday-Friday, 9 am-5pm.

Identify 4-5 projects you are interested in. Note Student Participation, Minimum Qualifications, and hours required, etc.

Helpful tips for Interviewing and Project Selection

Complete the Project Information Sheet provided by your Peer Advisor. Make sure to include all relevant information, especially office address, e-mail address, project title and phone number.

Complete an Interview Referral Form and bring it to the faculty member's office.

Call or e-mail faculty members to set-up an interview. Be professional. Make sure you address the faculty member by the correct title (i.e. Dr.).

Prepare a list of questions to ask the faculty sponsor.

Go to your interviews on time! Dress professionally, act professional, and be enthusiastic!!!

Get a project!

•Reminders•

Complete an Interview Referral Form and bring it to the faculty member's office.

Call or e-mail faculty members to set-up an interview. Be professional. Make sure you address the faculty member by the correct title (i.e. Dr.).

Prepare a list of questions to ask the faculty sponsor.

Go to your interviews on time! Dress professionally, act professional, and be enthusiastic!!!

Questions to Ask at an Interview

What is the purpose of the research?

How long has the project been going?

How many hours am I expected to work?

What type of background knowledge am I expected to have? How can I acquire this knowledge?

Do I need any outside training (i.e. radiation workshop)?

What role or additional responsibilities would I gain in the project as I get more experience?

What type of work will I be doing (i.e. data entry, observations, experiments, interviews)?

Does the project involve working with animals, radiation, computers, chemicals, etc.?

Am I expected to work at home?

Can I attend lab meetings or other research meetings?

Will I ever be expected to miss classes for meetings?

Will I work in any area that is hazardous to my health?

How flexible will my hours be? Am I allowed to have time off for exams?

Will I be directly working with you or someone else in the lab? Who will be my day-to-day supervisor?

Interview Do's and Don'ts

Do dress properly. Wear a nice shirt or blouse with casual slacks or skirt.

Do listen attentively.

Do research on the faculty mentor and project, if possible, ahead of time.

Do prepare some answers to common interview questions in advance.

Do be enthusiastic!

Do ask intelligent questions, prepare some ahead of time. (See previous article.)

Do remember the interviewer's name and use it periodically throughout the interview.

Do answer questions thoroughly.

Do present a confident self-image.

Do the best you can.

Do follow up.

Don't look grim.

Don't sit passively.

Don't be late.

Don't deliver answers to interview questions as if you rehearsed them.

Don't call the interviewer by his/her first name, unless given permission.

Don't dominate the conversation

Don't bad-mouth past employers.

Don't lie.

Don't feel bad for making mistakes or not knowing something.

Things Faculty Sponsors Look For

Faculty sponsors generally look for things which fall into three broad categories: **technical skills, general abilities, and personality characteristics**.

Independence-Are you able to work on your own?

Objective-Do your goals match?

Compatibility-Will you fit into the organization of her/his research project?

Intelligence-Are you capable of making good contributions to the research project?

Motivation-Will you be self-motivated to do the required work?

Enthusiasm-If you are enthusiastic it is assumed that you are interested in the project and will be an asset.

Assertiveness-Can you think on your own and stand up for your ideas?

Adaptability-Can you adapt to a field that is forever changing?

Maturity-Can you accept responsibility and get along with all types of people?

Communication-Can you articulate your thoughts effectively? Are you willing to ask questions or seek clarification?

Commitment-Are you serious about the research?

Tips for Being a Good Listener

Focus your attention on what the interviewer is saying, listen to the content.

Respond with nonverbal cues. Smile and nod your head to demonstrate interest.

Resist the impulse to interrupt.

Listen objectively. Do not judge or criticize what you hear; doing so will prevent you from comprehending what is being said.

Remember your purpose. Don't let yourself be distracted.

Explore Something New!

When I first came to the University of Michigan, I wanted to do everything! I was completely overwhelmed by all the different disciplines of study available in the College of LSA alone. Do I do something in the natural sciences and pursue my high school interest of environmental action? Do I continue to explore writing? How about history, physics, and art? And those things we didn't have in high school - women studies, Near Eastern studies???

UROP allowed me to explore a new field of study in depth as early as my second year. Working on an aspect of Dr. David Allan's River Raisin Watershed project, I got a first-hand look at how one lab goes about researching the scientific basis of environmental policies that I was reading about in other classes. I gained a great deal from taking a chance and doing something that wasn't entirely familiar. For me, learning the process of research became more important than the field we were studying. Even though I will not be going into environmental studies, I realized the concepts and research processes I learned are applicable to my work in art.

Let UROP expose you to something new! When looking through the research project book, glance through sections you have never before considered - you may be surprised at what you find out about yourself.

Chris Zerka
UROP Peer Advisor

•Reminders•

Do listen attentively.

Do research on the faculty mentor and project, if possible, ahead of time.

Do prepare some answers to common interview questions in advance.

Don't look grim.

Don't be late.

Don't feel bad for making mistakes or not knowing something.

Credit and Work Study Checklists for UROP Students

•Reminders• Academic Credit

Obtain an electronic override to register for UC 280 or other approved courses from the UROP office.

Register by telephone for UC 280 or other approved course.

•Reminders• Work Study

Bring your contract and your Financial Aid Award Notice to the UROP office and have it signed by, Sandra Gregerman, Program Director.

Complete Temporary Employment Forms. Bring in identification(usually Driver's License and Social Security Card) in order to establish your identity and employment eligibility.

Academic Credit

Attend Enrollment Workshop

Make follow-up appointment with Peer Advisor to look for projects

Contact faculty and set up interviews

Once you have found a project, have your faculty sponsor sign a contract

Bring that contract to the UROP office and have it signed by Sandra Gregerman, Program Director

Obtain an electronic override to register for UC 280 or other approved courses from the UROP office

Register by telephone for UC 280 or other approved course

Get your timesheets and due dates from UROP office

Make an appointment to see your Peer Advisor approximately two weeks after turning in your contract and beginning work

Complete timesheets according to schedule and bring them into the UROP office, **make sure your faculty sponsor or other authorized signer has signed the timesheet**

Work Study

Attend Enrollment Workshop

Make appointment with Peer Advisor to look for projects

Contact faculty and set up interviews

Once you have found a project, have your faculty sponsor sign a contract

Bring your contract and your Financial Aid Award Notice to the UROP office and have it signed by, Sandra Gregerman, Program Director

Complete Temporary Employment Forms. Bring in identification (usually Driver's License and Social Security Card) in order to establish your identity and employment eligibility

Complete direct deposit forms, if desired

Get your timesheets, work-study earning log and a copy of your contract from UROP office

Make an appointment to see your Peer Advisor approximately two weeks after turning in your contract

Complete timesheets according to schedule and bring them into the UROP office, **make sure your faculty sponsor or other authorized signer has signed the timesheet underneath your name**

UROP Calendar and Syllabus

Fall 1995

August 30, 31	Enrollment Workshops
September 6	First Research Peer Group Meeting Ice breakers, Interview Tips, Coursepack
September 20	Research in Your Field Article Discussion/Faculty Researcher Ethics, Practice, Challenges
October 11	Library/Computer Workshop
October 25	Time Management Workshop/Research Presentations
November 8	Coca Cola Researcher in Residence Presentation
November 29	Research Presentations/Writing Abstracts Conducted by the English Composition Board
December 6	Research Presentations/Handling Stress

Winter 1996

January 10	Resume Writing/Research Presentations
January 17	Martin Luther King Research Symposium
January 31	Graduate School Panel
February 14	Professionals Panel
February 28	Field Trip (Museum, Lecture, Play, etc.)/ Coca Cola Researcher in Residence
March 13	Controversial Issue/Research Presentations/ Gender- Based Research Symposium
March 27	End of the Year Wrap Up/Get Together/ Research Presentations
April 10	Spring Research Symposium

OTHER IMPORTANT DATES

Fall 1995

September 5	Classes begin
September 25	Drop/Add Deadline
November 13- December 6	Registration for Winter 1996
November 22	Thanksgiving Recess begins (classes resume November 27)
December 8	Classes End
December 9-10	Study Days
December 11-18	Final Exams
December 17	Commencement

Fall 1996

January 8-9	Registration
January 10	Classes Begin
January 29	Drop/Add Deadline
March 2	Spring Recess
March 11	Classes Resume
April 1-17	Registration for Fall 1996
April 23	Classes End
April 24	Study Day
April 25-May 2	Final Exams
May 3-5	Commencement

Staff Information

UROP Student Handbook Staff

Daren Hubbard
Angela Locks
Rebecca Pacheco
Christine Zerka

Produced Summer 1995

Undergraduate Research Opportunity Program

Sandra Gregerman
Director

UROP Staff

Program Director

◊ Sandra Gregerman
(sgreger@umich.edu)
747-2768

◊ oversees the program

◊ deals with crisis management and problem-solving

◊ serves as a liaison with faculty, other university departments, outside agencies, and organizations

Administrative Assistant

◊ Rosa Maria Cabello
747-2768

◊ performs administrative activities for UROP, specifically work-study students' paperwork, timesheets, and supplementary funding requests from faculty

◊ monitors the daily activities of peer advisors and the main UROP Office, L-110

Program Coordinator

◊ Daren Hubbard
(dari@umich.edu)
747-2768

◊ coordinates activities of the program assistants and peer advisors

◊ coordinates outreach and UROP alumni activities

◊ acts as a liaison between UROP and other campus organizations and offices

Program Assistants

747-2768

◊ Rebecca Pacheco
Liaison with WISE and 21st Century Programs

◊ Beth Kapp
Women in Science

Evaluation Coordinator/Graduate Research Assistant

◊ Ratnesh (Biren) Nagda
763-4831

◊ coordinates all UROP research activities

Peer Advisors

Biomedical
Larissa Chism
Alysia Green
Shree Kilaru
Ellsworth Holmes
Rachel Lambert
Marissa Muscat
Prakesh Pandalai
Michelle Sia

Social Science
Salomon Frausto
Angela Locks
Sean O'Neil
Valada Richardson
Ana Spiguel
Angela Steele
Christopher Wetzel

Humanities
Christine Zerka
Jason Marchant
Salomon Frausto

Women in Science
Tori Briscoll
Beth Keys
Cathi Turner

Physical Science/Engineering
Jason Raines
Marisela Reyes

◊ act as liaison between faculty advisors and students

◊ plan and conduct research peer groups

◊ assist students with academic advice regarding concentrations, course selections, and study skills

◊ serve as an information resource for students.

continued from previous page...

Thomas Carey

Well this turned out to be more than a paragraph but it touches on what I think are the things a student should be able to expect from a mentor during a research rotation. A mentor should be prepared to provide students with three things: time, teaching, and a 'learn by doing' environment.

It is easy to underestimate the amount of time that it takes to provide a good research experience for undergraduate students. It is also easy to forget that an undergraduate student enters the lab armed primarily with curiosity and a desire to learn. Therefore, the mentor has the responsibility of providing the background necessary to begin lab work.

The students should understand the basis for their experiments and their research should be driven by a testable hypothesis. The mentor must be able to provide enough time to give the student a good background in proposed work. This could take the form of a discussion that answers the question "Why are we interested in the proposed experiments?" We also stress putting the students' experiments into a bigger context, and in the course of the research experience we reinforce the context by asking the students to recall why we do things a certain way.

This works best for me by going into the lab and chatting informally with the students and we also use lab meeting presentations as an opportunity for the students to teach others. This is perhaps the strongest reinforcement tool we have.

We also use teams, where the see one, do one, teach one rule is employed. This quickly allows the student to see the gaps in their own knowledge and provides an opportunity for more learning. It is clear that we all learn best by doing.

The student must be given something that is their own, even if it is a part of a bigger project. They must have full responsibility for the experiments and they must be adequately trained so that they can be successful. The mentor must be prepared for experiments that fail and these should be used as learning tools to reinforce the scientific basis for the experiment. Every result is the logical consequence of what was done in an experiment. Even if the results are not the expected ones, they still are the results of the experiment. The outcome will reflect what the student did and can often be used to reinforce the biology, chemistry, or physics that were involved in the experiment. An ideal environment should have no limits on what an undergraduate is capable of doing, that is, there should be no "glass ceiling".

> "A MENTOR SHOULD BE PREPARED TO PROVIDE STUDENTS WITH THREE THINGS: TIME, TEACHING, AND A 'LEARN BY DOING' ENVIRONMENT. ...
>
> AN IDEAL ENVIRONMENT SHOULD HAVE NO LIMITS ON WHAT AN UNDERGRADUATE IS CAPABLE OF DOING, THAT IS, THERE SHOULD BE NO "GLASS CEILING". "
>
> THOMAS CAREY

Student learning works best where the only limitation is the student's own level of ability, understanding, and time. When a student is involved intellectually with a project and he or she has responsibility for data interpretation and experimental planning the student "buys in" to the project. I tell my students if they are not thinking about their project while they're in the shower in the morning, then they are still letting someone else do their thinking.

I am impressed every year by what my students accomplish when they are given a good foundation and the opportunity to grow as they confront the challenge of an intriguing intellectual problem. The foregoing not withstanding, everyone should be aware that the student's time is valuable, and limited during the school year. The project should be geared to the time the student has to give and there should be access toequipment and resources during the time the student is in the laboratory.

Thomas Carey
Research Scientist
Medical School

Colleen Seifert

The diversity of researchers involved in the UROP program leads to extremely variable experiences for the undergraduates who join the research projects. However, after much analysis, three general principles regarding faculty mentors become apparent. Keeping these three principles in mind may help you to navigate the unfamiliar environment you are about to enter:

1. Right-Mindedness
During the term, you will be called upon to perform a wide variety of tasks, including conducting literature searches, making phone calls, and xeroxing. The work you do will greatly benefit your faculty mentor by providing extra hands and, most

continued on next page...

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importantly, an alert mind to share some of the heavy load of activities involved in research. Yet, no matter how useful you become to your mentor, you should know that (s)he is not participating in UROP simply to benefit from your efforts. Experienced faculty mentors know that the demands of training a new team member far outweigh the gains; yet, they are eager to participate year after year. Why? Because your faculty mentor ACTUALLY BELIEVES THAT RESEARCH TRAINING IS AN IMPORTANT EDUCATIONAL GOAL. It is only because they believe in the importance of hands-on education that they are willing to commit themselves to taking you onto their projects.

2. Absent-Mindedness

Despite their right-minded thinking about research education, the best-of-intentioned faculty mentor can also seem only dimly aware of your activities on the project. In the week's time since you last met with your mentor, they have often met with thirty other students, graduate assistants, employees, and colleagues about other ongoing projects. They may have also been teaching classes, writing papers and grants, traveling to conferences, and even having a personal life outside of work. In the midst of all this activity, they have been known to forget what they asked you to do last week, which project you are working on, and where they last left their car keys! So please, don't take it personally if they seem distracted, have to reschedule meetings, or forget to do something they agreed to do. Instead, make a point of recapping the last meeting for them, and remind them of tasks they need to do for you to proceed on your project. Faculty mentors need a little hand-holding from you too!

In addition to their frequent absent-mindedness about what needs to be done, faculty mentors share another common feature: They are single-minded about their work. They have succeeded in academic research because they truly love what they do, and thinking about, discussing, and conducting their research is the most important and most central activity on their minds. Their research questions consume them, and makes them actually prefer to spend Saturday in the library or laboratory instead of rollerblading in Gallup Park. In the view of some, this qualifies your faculty mentor as prime example of what being a "nerd" in college can lead to. To others, this strong focus on the challenging puzzles of solving the unknown makes for a fascinating mental life. It is your faculty mentor's hope that by participating in this life of mind, you will become similarly enchanted with research, and decide to embark on your own single-minded crusade.

> "So please, don't take it personally if they seem distracted, have to reschedule meetings, or forget to do something they agreed to do. Instead, make a point of recapping the last meeting for them, and remind them of tasks they need to do for you to proceed on your project. Faculty mentors need a little hand-holding from you too!"
>
> Colleen Seifert

Good Luck!
Colleen Seifert
Associate Professor of Psychology

John Jonides

Original research is one of the main missions of the University of Michigan in addition, of course, to educating both undergraduate and graduate students. Therefore, faculty with whom UROP students work are deeply involved and interested in the research projects they undertake.

> "...UROP students should be prepared to work from the bottom up on the projects that they select. But they will be rewarded with a closer relationship with a faculty member than they can ever expect to get through standard classroom work."
>
> John Jonides

A UROP student will have a unique opportunity to work with a faculty member on such original research projects, in many phases of the work that has to be done. It takes time to develop even minimal expertise in any field, however, so UROP students should be prepared to work from the bottom up on the projects that they select. But they will be rewarded with a closer relationship with a faculty member than they can ever expect to get through standard classroom work. And they will often have opportunities to work not only with the faculty member, but also with graduate students, post doctoral students, and other undergraduates who are working with that faculty member as well. Thus, they will dramatically expand the scope of education, will learn about some particular field in depth, and will have fun doing so.

John Jonides
Professor of Psychology

UROP Symposia Information

Martin Luther King Jr. Symposium

Our annual celebration of Martin Luther King Jr.'s birthday is held in January. This UROP wide event celebrates the ideals which he exemplified. Student researchers from diverse fields present their work along with their faculty sponsors. A call for abstracts is sent out in November. The symposium will be held January 17, 1996.

Gender-Based Research Symposium

In Celebration of Women's History Month, UROP held its first gender-based research symposium last March. Student and faculty researchers gave presentations on research related to women. Numerous disciplines were covered. Abstracts are due February 15, 1996 and the symposium will be held March 13, 1996.

Spring Research Symposium

Our annual research symposium is held in April for participating faculty and students. The symposium is an opportunity for students to give oral and poster presentations about their research. Usually 16 students are selected to do oral presentations and 100 to do poster presentations. Interested students must turn in abstracts by February 15 and presenters will be selected by March 15th.

The symposium is an excellent opportunity to share what you have learned while developing oral and poster presentation skills. This year's symposium will be held April 10,1996.

RADIONUCLIDE
SEPARATION USING
ANION EXCHANGE
CHROMATOGRAPHY

urop spring symposium
1 9 9 5

NON-CCK DEPENDENT DUODENAL
STIMULATION: MEDIATION VIA 5HT
SENSITIVE VAGAL AFFERENT PATHWAYS
Y. Li, C. Owyang, P. Liao
Department of Internal Medicine University of Michigan

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UROP

Peer Advisor and Peer Group Room Assignments

UROP NEWS is a
UROP Publication©1995
vol 4, num 1
UROP
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Ann Arbor, MI 48109-1346
313 747 2768

UROP is partially funded by the
King-Chavéz-Parks Initiative,
and the Howard Hughes Medical Institute

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Larissa Chism	MLB B109
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Shree Kilaru	MLB B111
Ellsworth Holmes	MLB B112
Rachel Lambert	MLB B113
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Michelle Sia	MLB B114

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Christine Zerka	3442 Mason
Jason Marchant	3448 Mason
Salomon Frausto	3429 Mason

Physical Science/Engineering

Jason Raines	1632 Chem
Marisela Reyes	1628 Chem

Social Science

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Angela Locks	G239 Angell
Sean O'Neil	3406 Mason
Valada Richardson	3416 Mason
Ana Spiguel	3415 Mason
Angela Steele	3427 Mason
Christopher Wetzel	Kline Lounge/ Alice Lloyd

Women in Science

Tori Briscoll	Nurses Alumni Room/Couzens
Beth Kapp	3409 Mason
Beth Keys	3402 Mason
Cathi Turner	3435 Mason

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UROP Faculty Handbook

1995-1996

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UNDERGRADUATE RESEARCH OPPORTUNITY PROGRAM

Mission

The mission of the Undergraduate Research Opportunity Program is to improve the retention and enrich the academic experience of undergraduate students during their first and second years at the University of Michigan. UROP develops research partnerships between students and faculty sponsors which are beneficial for both parties; students gain hands on experience in a field of their interest, and faculty gain the benefits of becoming a mentor to motivated students. In addition, UROP provides ongoing academic support services through its peer advising program and research peer groups creating a student research community.

Goals

- To engage first and second year students in faculty research early in their academic careers.
- To facilitate successful research partnerships mutually beneficial to students and faculty.
- To enable students to benefit from wealth of research activities at the University.
- To foster development of a community of student researchers by providing educational enrichment activities and ways for students to interact, network, socialize, and collaborate together
- To improve the retention and graduation rates of underrepresented minority students at the University.
- To increase the number of underrepresented minority students and women in the sciences who pursue diverse academic fields and enter graduate and professional schools.
- To promote and expand opportunities for undergraduate research throughout a student's undergraduate years.
- To evaluate the impact and effectiveness of participation in UROP for both faculty and students.
- To share the UROP model with other universities.

Undergraduate Research Opportunity Program

History and Evaluation Results

The Undergraduate Research Opportunity Program was originally developed in 1988 to increase the retention and improve the academic performance of underrepresented minority students at the University of Michigan. Today, the program includes minority and majority students, with a continued emphasis on underrepresented minority students and an emerging focus on women in science students. The original program was based, in part, on the critical observation that minority students do not identify with the intellectual mission of the university as advantaged students do and that this lack of identification leads to higher attrition rates for minority students. The emphasis on women in science students comes out of the mounting evidence regarding the high attrition of young women interested in science to non-science fields.

UROP also was developed to engage lower-division students at the University of Michigan more directly with faculty so they can benefit from the wealth of research activity taking place at the University and perhaps foster more interest in research-related or academic careers.

The UROP offers first and second year students individual interactions with faculty through the creation of research partnerships. Students in UROP collaborate with faculty on faculty research projects, thereby learning firsthand about academic research and developing computer, library, laboratory, and other research skills. During the 1995-96 academic year, 800 students will be engaged in research projects in virtually all University of Michigan schools and colleges and across most academic disciplines. The program now includes both minority and majority students but remains "minority-centered" in its admission policies and also has targeted activities for students of color.

In addition to the research partnerships, UROP provides additional academic support services for students enrolled in the program. One of these is an extensive peer advising program that includes both individual peer advising sessions between peer advisors (all UROP alumni) and students in the program and group sessions in which students with like interests gather to discuss various aspects of academic research, their specific UROP research projects and academic and non-curricular preparation for professional careers. We currently have groups in the Biomedical and Allied Health Sciences, Women in Science, Social Science, Physical Science and Engineering, and Natural and Environmental Science. Another program feature is a series of special workshops focusing on skill development (time management and library research for example) We also sponsor topic oriented research symposia to showcase student research .

In addition to the above, UROP is engaged in an in-depth, five year program evaluation funded by FIPSE. There are four dimensions to this evaluation: (a) to evaluate the effect of the program on student performance, including retention to graduation; b) to assess the effect of UROP on the attitudes of students toward their intellectual capability, college work, academic potential, etc.; (c) to measure the effect of student-faculty research partnerships on the faculty who are involved, assessing any changes in faculty's perceptions of students; (d) and to determine how well the mechanics of the program operate, looking for changes in operation that may improve service to students. Our evaluation effort includes the creation of carefully matched control groups for each cohort of students we are tracking.

Our analysis of data so far has concentrated on academic outcomes, especially retention, academic performance, and course selection patterns. We are encouraged by the results obtained to date. Our findings include: (a) a comparison of attrition rate between UROP students and underrepresented students university-wide reveals that UROP students had an attrition rate 32% lower than underrepresented students in general (13.6% vs. 20.0%); (b) African-American students in UROP show an attrition rate 51% lower than those in our respective control group (9.2% vs. 18.6%); (c) attrition for white and Asian students in UROP with low grade point averages was 0% vs. 12% for students in our white and Asian control group; (d) participation in UROP resulted in grade point averages some 6% higher, 2.73 vs. 2.58 for all students; (e) African-American students in UROP show a 7% grade point average difference (2.69% vs. 2.51%); (f) UROP seems to be having an effect on self-esteem, coping strategies, learning behaviors, and expectations about academic performance, especially for African-American students in the program; and (g) underrepresented students in UROP feel more supported by the University than students in our control group.

The evaluation team is continuing to analyze data obtained for three cohorts of students, those enrolled in the program for academic years 1991/1992, 1992/1993, and 1993/1994. In addition to the findings reported above we are also looking at the effect of the program on faculty. Faculty who participate in UROP report a stronger appreciation of the value of diversity in the University as well as a better understanding of the barriers to success minority students and women in science encounter at the University of Michigan.

Students participate in UROP for either academic credit or work-study pay. A limited number of grants are given each year to students with demonstrated financial need. In the College of Literature, Science and Arts students register for UC280 or UC281. Students in other schools and colleges enroll in either independent study courses or courses created specifically for UROP. Students who have received a work-study award as part of their financial aid package can apply this award to UROP. Currently, through various external and internal funding sources UROP covers all work-study costs. UROP faculty sponsors can apply for supplementary research funds to cover student-related costs such as small laboratory equipment or materials, publications, or copying costs. The average award is $300.

Funding to start the pilot UROP program came from several university sources including the Office of the Vice President for Research, the Office of Minority Affairs, and the Office of the Vice President for Student Services. Our outside funding sources include the State of Michigan's Office of Minority Equity (supporting minority student participation in UROP), the Department of Education's Fund for the Improvement of Post-secondary Education (supporting the program evaluation), and the Howard Hughes Medical Foundation (to expand our biomedical and allied health science placements.) We also receive support from private donors and are part of the university's Capitol Campaign to establish a three million dollar endowment.

FACULTY CHECKLIST

o Interview and select students

o Sign UROP Research Contract for all students

o Apply for Supplementary Research Funding

o Set-up a regular meeting time with student researcher(s)

o Sign biweekly Timesheets for credit and work-study students

o Notify UROP office immediately if any problems arise, e.g. student fails to show up, is not spending sufficient hours on project, has not been meeting with you to discuss his/her progress

o Complete midterm progress report (forms will be sent to you in early November and February)

o Assign term projects to all student researchers

o Submit grades for students enrolled for academic credit

The following page contains more detailed information about specific items on the checklist.

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PROGRAM RESPONSIBILITIES FOR FACULTY SPONSORS

Student Selection

You will interview and select the students you wish to work with from the UROP student pool. Students will submit an Interview Referral Form to you and then you will choose who to interview. After making your selection, please contact the student to let them know. We will also encourage students to follow-up with you.

The Contract

After you select your UROP student researcher, you both must sign the UROP Student Contract (see Sample Forms Section). The contract triggers either an override or employment paperwork. The contract outlines program requirements for all students, designates credit or work-study, and shows the agreed upon number of hours the student will be working each week.

Signing Timesheets

Both academic credit and work-study students are expected to submit signed timesheets every two weeks. Please make sure that you sign these forms confirming the number of hours the student has worked. Students are required to hand these in to us for our records, **If you are unable to meet with your students on at least a bi-weekly basis, please designate another person who will be authorized to sign these forms using the Verification Form. Students cannot be paid without signed timesheets. Timesheets must be turned in to the UROP Office (L-110 West Quad) every other Friday by noon. The student will be given a schedule of the exact dates.**

Midterm Progress Report

We ask that you complete a midterm progress report on your student, one at the beginning of November and one at the end of February. We recommend that you meet with your student and complete the report together. A copy of this brief report will be given to the student's peer advisor. Please contact the UROP office as soon as possible if you have any concerns about your student. The student's peer advisor will immediately try to deal with and resolve any problems.

Term Project

Faculty sponsors are responsible for assigning the projects due at the end of each term for all their students. Please give enough guidance and specific instructions so students understand what they are expected to produce. Peer advisors will be available to students if they need assistance in library research skills or in finding resources for writing help. We recommend that students write an abstract for their fall term project and a longer paper, oral or poster presentation to be given at the Spring Research Symposium for their winter term project.

Grading/Grade Forms

Please return the UROP grade forms on a timely basis. This form must be handed into the UROP office at the end of each term so the UROP Director can post students' grades. UROP combines the grade you have given your student with the peer advisor's evaluation of the student's attendance and performance in the research peer groups. Grades should be based on attendance, quality of work, and their term projects (see p. 7).

Faculty Responsibilities

- Interview and select students
- Sign the UROP Student Contract
- Sign timesheets
- Complete midterm progress report
- Assign a term project
- Fill out a grade form and return to the UROP office in a timely fashion
- Contact the UROP office concerning any student issues

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REQUIREMENTS FOR UROP STUDENTS

Finding a project

Students identify projects which interest them and set up interviews with faculty sponsors. If you hire them, they are responsible for completing the information on the contract and obtaining your signature before handing it into the UROP office.

Research

UROP students are expected to work an average of 6-10 hours/week on their research projects. The hours will be determined by the needs of each project. For academic credit students, three hours of work per week is equivalent to one credit hour. Academic credit students and work-study students are responsible for fulfilling the same program requirements.

Individual Peer Advising Appointments

Each student will be assigned to a peer advisor and will be required to meet with them on an individual basis at least once a month. These meetings enable the peer advisor to monitor the research partnership and help the student with any time management, communication, or academic problems that arise.

Term Project

Students are required to complete end of term projects. Fall term we would like all students to write a research abstract about their project in order to learn how to write abstracts. Winter term we recommend students write a research paper, give an oral presentation at the annual UROP Spring Research Symposium, or prepare a poster presentation for the symposium. The student should discuss her/his project with you and have you review the work and evaluate the final product.

Research Peer Groups

Students are required to participate in biweekly peer groups with 25-30 other UROP students engaged in similar types of research projects. The groups meet every other Wednesday evening from 6:30-8:00 p.m. In these groups, the students share their research experiences, participate in research skills workshops, and discuss critical issues in a given discipline such as ethics in research, confidentiality, censorship, animal rights, the use and abuse of research findings, etc.

The meetings are tailored to fit the needs and interests of the students in that group. It is a place where students can interact with other students who have similar interests and can share their research experiences. The research peer groups are: biomedical, humanities, natural and environmental science, physical sciences and engineering, social sciences, and women in science.

UROP Journal

This requirement is an important part of the UROP experience. It gives students a chance to reflect on the research experience and any concerns or issues arising from their experience and/or the University in general. Reflection is a valuable way to reflect upon what one is learning both the content and the effect. The journals also provide another way for the student and their peer advisor to communicate.

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GETTING THE MOST OUT OF YOUR RESEARCH PARTNERSHIP

UROP research partnerships should be beneficial to both the student and you. We know UROP students gain many skills which will be useful in other academic and professional situations. We hope you gain students eager to contribute their perspective and energy to your project.

Communication

Successful partnerships require good and clear communication. Research is a new experience for most first and second year students, and they may be unclear about what research entails or your expectations. Clarify your specific expectations when they first begin work on your project. It is also helpful to keep them informed of ongoing changes regarding the project.

Touching Base with Students

- Set mutually agreed on target dates for completion of training or a specific task.
- If possible, schedule a regular time to meet each week or every two weeks.
- If you are working with a group of students, encourage them to learn from each other and if possible and useful meet as a group.

Regularly Scheduled Meetings/Feedback

We recommend that you set up some time to meet with your students at least once every two weeks. You and the student can discuss what progress he/she has made during that period. The student can ask questions and receive guidance for the next phase of the task. You can assess whether or not the student is ready for more independent work. It is also an opportunity to provide feedback to the student about work habits and the quality of work they do, their strong points and the areas that need improvement.

Time Commitment

The number of hours students should work each week is something which you and the student should negotiate from the very beginning. It is part of their contract. It is important that the student is clear about the number of hours you expect him/her to devote to the project; it is also important that students can fit this commitment into their schedules. First year and second year students are still adjusting and they may need some flexibility when they first begin. We recommend that students work an average of 8 - 10 hours per week on their research project. However, this will vary from project to project and student to student.

Student Development

First and second-year students are still dealing with issues of adjustment and growing responsibility. They are learning how to manage their time and juggle multiple responsibilities. Many will be uncertain and nervous about asking questions for fear of sounding ignorant, they may hesitate to ask for help, or not know what questions to ask.

They may need to be guided in specific ways before they can assume a more independent role in the research project. It may be useful at first to break down a particular task into incremental steps so that there are many opportunities for you to monitor their progress and for the student to ask what the next step should be. Eventually, however, the student should become comfortable and confident in doing a task without supervision.

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UROP STAFF ROLES

Program Director ◊ Sandra Gregerman
◊ oversees the program
◊ oversees selection and training of students, faculty, and staff
◊ responsible for fundraising activities including grant writing and administration of grants
◊ deals with crisis management and problem-solving
◊ serves as a liaison with faculty, other university departments, outside agencies, and organizations

Administrative Assistant ◊ Rosa Maria Cabello
◊ performs administrative activities for UROP, specifically work-study students' paperwork, timesheets, and supplementary funding requests from faculty
◊ assists in coordinating receptions and other UROP events
◊ responds to inquiries received from faculty, staff, students, outside agencies, and the public.
◊ monitors the daily activities of peer advisors and the main UROP Office, L-110

Program Coordinator ◊ Daren Hubbard
◊ acts as a resource person for program assistants and peer advisors
◊ coordinates outreach and UROP alumni activities
◊ produces all program materials, such as brochures, handbooks, and newsletters
◊ acts a liaison between UROP and other campus organizations and offices
◊ serves as UROP's computer consultantt and coordinator, assists with training and database management

Program Assistants

Rebecca Pacheco	GE and Howard Hughes Fellowship Programs., Liaison with WISE and 21st Century Programs, Program planning for student of color workshops/support services
Beth Kapp	Women in Science

◊ serves as a resource for students
◊ coordinates the Newsletter, research peer groups, and information on summer research opportunities
◊ organize special events including the annual MLK and Spring Research Symposium

Evaluation Coordinator/Graduate Research Assistant
Ratnesh (Biren) Nagda
◊ coordinates all UROP research activities
◊ conducts evaluation/reseaerch activities
◊ maintains student database for current and former UROP students
◊ designs program evaluation instruments

Peer Advisors

Biomedical

Larissa Chism
Alysia Green
Shree Kilaru
Ellswroth Holmes
Rachel Lambert
Marissa Muscat
Prakesh Pandalai
Michelle Sia

Social Science

Angela Locks
Sean O'Neill
Valada Richardson
Ana Spiguel
Angela Steele
Christorpher Wetzel

Humanities

Christine Zerka
Jason Marchant
Salomon Frausto

Women in Science

Tori Brescoll
Bethy Keys
Cahti Turner

Phy Sci/Eng

Jason Raines
Marisela Reyes

◊ act as liaison between faculty advisors and students
◊ plan and conduct research peer groups
◊ assist students with academic advice regarding concentrations, course selections, and study skills
◊ serve as an information resource for students

OTHER USEFUL INFORMATION

Supplementary Funding

UROP faculty sponsors can apply for supplementary funding if your student researchers need special materials to work on their project. The average award is $300 and we will need an itemized list of expenses along with the Supplementary Research Funding Application. Forms will be mailed to you in October and should be returned to our office. You will be notified if your request has been approved. If you have further questions, please contact our office.

Academic Credit

The students in UROP participate in the porgram either for academic credit or for work-study funding. In either case, our objective is to provide the students with an academic experience that introduces them to the full range of research experiences: reading primary literature, developing hypotheses, designing and carrying out experiments or studying, analyzing results, and writing about research.

Students participating in UROP for academic credit will be enrolled in one of the following courses depending upon their school or college of enrollment and/or your department, school, or college.

College of Literature, Science, and Arts
UC 280
This course can be taken for 1-4 credits. Credit is based on hours worked per week. For each 3 hours of work per week, the student will receive 1 credit. Students must receive an override from the UROP office to enroll in this course. Overrides will be issued after a signed contract is submitted to the UROP office. The signed contract should specify how many hours per week the student will work.

College of Engineering
Engineering 195 (various sections)
This course was created for engineering students participating in UROP. For each 3 hours worked per week, the student can receive 1 credit hour. Students must receive an override from the UROP office. Overrides will be issued after a signed contract is submitted to our office specifying hours to be worked per week.

School of Art, Music, Natural Resources and Environment, or Dvision of Kineisiology Students
Students in these units have the option of registering for UC 280 or signing up for independent study credit through their unit of enrollment if they are participating in a project in their respective field. In these cases you can issue the override and the student needs to bring in the signed contract to the UROP Office for our records.

Grading

UROP students participating for academic credit will be graded on the following. As the faculty sponsor, you will be required to grade the students on # 1 and # 2 which will be 80% of their grade. The student's UROP peer advisor will monitor # 3 which will comprise 20% of their grade.

1 • Research performance: How well did they perform their research tasks? Did they have good attendance and follow-through on assignments?
2 • Abstract, Paper, Oral or Poster Presentation: quality of work, understanding of topic
3 • Participation in other UROP required activities: level of participation, attendance, completion of program, journal, etc.

You will receive UROP grade sheets two weeks prior to the end of each term. These must be returned to Sandra Gregerman, Program Director, who will submit the final grades. You will not receive an "official" grade sheet for your students unless they are enrolled in an independent study course through your department.

Work Study Students

Students participating in UROP for work-study funding will need to complete work-study employment forms in our office. We will cover all work-study costs. To receive their work-study funding they must bring in their signed contract and financial aid award notice to the UROP Office, L-110 West Quad. We will then process all required hiring paperwork. Students will need to submit signed timesheets every two weeks signied by you or another authorized signer. Timesheets must be submitted on designated Fridays by noon for students to be paid on time. If you choose to designate an authorized signer, we must have a copy of a Verification Form on record. Forms will be mailed to you in October.

UROP Calendar
Research Peer Group Syllabus

Fall 1995

August 30, 31	Enrollment Workshops
September 6	First Research Peer Group Meeting Ice breakers, Interview Tips, Coursepack
September 20	Research in Your Field, Article Discussion/ Faculty Researcher (Ethics, Practice, Challenges)
October 11	Library/Computer Workshop
October 25	Time Management Workshop/Research Presentations
November 8	Coca Cola Researcher in Residence Presentation
November 29	Research Presentations/Writing Abstracts (Possible workshops with ECB assistance)
December 6	Research Presentations/Handling Stress Final Abstracts Due/Abstracts for MLK Symposium Due
December 20	Grade Sheets Due in UROP Offices (L-110, West Quad)

Winter 1996

January 10	Resume Writing/Research Presentations
January 17	MLK Research Symposium
January 31	Graduate School Panel
February 14	Professionals Panel
February 28	Field Trips (Museum, Lecture, Play, etc.)/Coca Cola Researcher in Residence
March 13	Controversial Issue/Research Presentations/Gender-Based Research Symposium/Abstracts Due for Spring Research Symposium
March 27	End of the Year Wrap Up/Get Together/Research Presentations
April 10	UROP Spring Research Symposium
May 6	Grad Sheets Due in UROP Offices (L-110/West Quad)

Appendix

UROP Undergraduate Research Opportunity Program 1995-1996

580 Kennedy Drive Rm. L-110 zip: 1326 ◆ *Phone: 747-2768* ◆ *fax: 763-7872*

Student Contract

UROP students must fulfill all program requirements outlined below in order to remain in the program and receive either academic credit or work-study pay. The requirements and expectations are listed below. Please read this contract very carefully and refer to it often as the year progresses. Failure to comply with these requirements could result in a lower grade and/or termination from the program. Students who meet all the requirements should have a successful and rewarding UROP experience.

Requirements

1. **Report to work on a regular basis and for the required number of hours.**
2. **Notify your faculty sponsor and/or supervisor if you cannot report to work at the required time due to illness or other valid problems.**
3. **Attend monthly individual peer advising sessions to discuss research partnerships, academic concerns, career planning, etc.**
4. **Complete a journal chronicling and reflecting on the research experience.**
5. **Attend bimonthly research peer group meetings which are held on alternate Wednesday evenings from 6:30-8:00 p.m or program workshops.**
6. **Complete a research abstract and final paper, oral , or poster presentation about your research.**
7. **Submit signed timesheets to the UROP office on a bi-weekly basis.**
8. **Attend Spring Research Symposium and other UROP-sponsored special events.**
9. **Meet with your faculty sponsor on a regular basis to discuss your progress, concerns, needs, etc.**
10. **Complete program evaluation forms as requested.**

PLEASE PRINT CLEARLY

Student Name: ______________________ Student Phone #: ______________ I.D.# ______________

Research Sponsor: ______________________________ Project #: ______________

Project Title: ____

Department: ______________________________ Faculty Phone #: ______________

____U280 ____Other Approved Course ____Work-Study ____UROP Grant ____Eng. 195

____Credits (One credit for every 3 hours of work per week) ____ Hours per week (15 hours maximum)

Research Sponsor's Signature: ______________________ Date: ______________

Student's Signature: ______________________ Date: ______________

UROP Director's Signature: ______________________ Date: ______________

The signed contract should be returned to the UROP office, Rm L - 110 West Quad Annex.

UROP Undergraduate Research Opportunity Program 1995-1996

580 Kennedy Drive Rm. L-110 zip: 1326 ◆ Phone: 747-2768 ◆ fax: 763-7872

INTERVIEW REFERRAL FORM

EDUCATION

ACADEMIC HONORS

RELEVANT COURSEWORK

SKILLS

Research •

•

Laboratory •

•

Computer •

•

EXPERIENCE

ORGANIZATIONS

UROP Undergraduate Research Opportunity Program 1995-1996

580 Kennedy Drive Rm. L-110 Zip: 1346 Phone: 747-2768Fax: 763-7872

INSTRUCTIONS FOR COMPLETION OF VERIFICATION FORM

Each timesheet that is submitted to UROP (whether it is work-study or credit) must be signed by the faculty researcher or another person who can verify the number of hours worked by the student. This person should be someone who either works with the student or keeps track of the hours the student works (e.g., GSRA, administrator, secretary). In the event a time sheet is turned in without a signature, we need to know who to contact for verification. In the case of work study students, the time sheet will not be processed for payment until a signature is obtained or we receive verbal verification by telephone. It is important that we abide by this rule so that students are not inadvertently paid for hours they did not work.

Please complete this form and return it the UROP office as soon as you have all of the students you need for your project. If there are any changes that occur during the course of the year, please notify the office as soon as possible by telephone or by e-mail.

UROP Undergraduate Research Opportunity Program 1995-1996

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VERIFICATION FORM

Faculty Name: ____________________

Department: ____________________ **Phone:** ____________________

Additional person who can sign timesheets and verify hours worked by student(s):

Name: ____________________

Title and Dept. ____________________

Address: ____________________ **Phone:** ____________________

Name(s) of UROP student(s):

Student	**Work Study/Credit**

Please return to the UROP Office Attention: Rosa Maria Cabello

UROP Undergraduate Research Opportunity Program 1995-1996

580 Kennedy Drive Rm. L-110 Zip: 1346 Phone: 747-2768 Fax: 763-7872

INSTRUCTIONS FOR COMPLETION
OF
SUPPLEMENTARY RESEARCH FUNDING APPLICATION

Each UROP project is eligible for supplementary funding to support undergraduates' participation in your research. This funding is intended to supplement the costs of low-cost equipment and materials, such as lab supplies, Xeroxing, telephone calls, etc. Please indicate the expense item(s) and the estimated costs.

If approved, funds will be transferred into a University account, usually a discretionary account. This account may not be a federally-funded account (one that begins with a 0). Please indicate the name, address and phone number of an administrative assistant, secretary or other person whom our office may contact if we have any questions regarding the transfer of funds. You will be sent a memo indicating the approval of transfer of funds and the amount of the transfer.

If you have any questions regarding supplementary funding, please contact Sandra Gregerman at 7-2768.

UROP Undergraduate Research Opportunity Program 1995-1996

580 Kennedy Drive Rm. L-110 Zip: 1346 Phone: 747-2768 Fax: 763-7872

SUPPLEMENTARY RESEARCH FUNDING APPLICATION

Name: ____________________

Campus Address: ____________________ Phone: __________

Line item description of expenses and estimated costs to be incurred by the student(s) for academic year 1995/1996:

Expense	Cost

(Use additional sheet if necessary)

Total amount requested: $__________

Other funds available: $__________

Account Number for funds transfer: __________
(This cannot be a federally-funded account)

Administrator of Account: ____________________

Campus Address: ____________________ Phone: __________

(Please submit one application per project —not per student).

UROP Undergraduate Research Opportunity Program 1995-96

580 Kennedy Dr. Rm. L-110 Zip: 1346 Phone: 747-2768 Fax: 763-7872

CREDIT TIME SHEET

STUDENT NAME ____________________

PROJECT # ________ BI-WEEKLY PERIOD (DATES) ____________
(See reverse side)

SUNDAY	________	SUNDAY	________
MONDAY	________	MONDAY	________
TUESDAY	________	TUESDAY	________
WEDNESDAY	________	WEDNESDAY	________
THURSDAY	________	THURSDAY	________
FRIDAY	________	FRIDAY	________
SATURDAY	________	SATURDAY	________
Total Week #1	________	Total Week #2	________

TOTAL HOURS ____________

Student Signature ____________________

Faculty Researcher Signature ____________________

TT/WS

THE UNIVERSITY OF MICHIGAN - PAYROLL OFFICE
BI-WEEKLY TIME REPORT - TEMPORARY

SOC. SEC. NO. ____________________________

NAME ____________________________________ PAYDATE __________ PAY PERIOD ____________
LAST NAME FIRST NAME AND INITIAL NUMERIC END DATE

ENTER FRACTIONAL HOURS IN DECIMAL FORM ON A TENTH OF AN HOUR BASIS

A.

FIRST WEEK	HOURS WORKED	SECOND WEEK	HOURS WORKED
SUNDAY	_ _ . _	SUNDAY	_ _ . _
MONDAY	_ _ . _	MONDAY	_ _ . _
TUESDAY	_ _ . _	TUESDAY	_ _ . _
WEDNESDAY	_ _ . _	WEDNESDAY	_ _ . _
THURSDAY	_ _ . _	THURSDAY	_ _ . _
FRIDAY	_ _ . _	FRIDAY	_ _ . _
SATURDAY	_ _ . _	SATURDAY	_ _ . _

D. MONTH DAY YEAR

_ _ - _ _ - _ _

ENTER THE PAY PERIOD END DATE ONLY IF DIFFERENT THAN THE PREPRINTED END DATE. ALSO, LINE OUT THE ASSIGNED 5-DIGIT DOCUMENT # AT THE TOP RIGHT.

E. PLACE "X" IN BOX TO TERMINATE THIS APPOINTMENT

☐ DATE: ____________

REASON: ____________

B. SUMMARY HOURS

_ _ . _ REGULAR

_ _ . _ 1-1/2 OVERTIME

F. PAYROLL USE ONLY

_ _ _ . _ _ ☐ DEDUCT

☐ REASON: ____________

CODES 51-55

C. HOURLY RATE ________ ACCOUNT ________ ☐ PAYROLL USE ACCOUNT TITLE ____________________

RETURN TO PAYROLL OFFICE OR PAYROLL DROP BOX BY MONDAY NOON FOLLOWING CLOSE OF PAY PERIOD.

BEST COPY AVAILABLE

EMPLOYEE SIGNATURE (OPTIONAL)	DATE	DEPARTMENTAL AUTHORIZATION	PHONE NUMBER

INSTRUCTIONS

FOR A NEW HIRE, OR WHEN A PREPRINTED FORM IS NOT AVAILABLE, USE A BLANK FORM AND ENTER SOCIAL SECURITY NUMBER, NAME, PAYDATE, PAY PERIOD END DATE, AND IN SECTION C, ENTER HOURLY RATE AND ACCOUNT NUMBER; ALSO,

1. YOU MUST COMPLETE A SEPARATE TIME REPORT FOR EACH TWO-WEEK PERIOD. USE BLACK/BLUE BALLPOINT PEN.
2. THE "PAY PERIOD END DATE" IS THE SATURDAY OF THE SECOND WEEK OF THE PAY PERIOD.
3. ENTER DAILY HOURS EXACTLY AS WORKED IN THE APPROPRIATE BOXES IN SECTION A AND SUMMARIZE TOTAL HOURS WORKED IN THE "SUMMARY HOURS" SECTION IN SECTION B. TOTAL DAILY HOURS WORKED MUST EQUAL TOTAL SUMMARY HOURS.
4. "1-1/2 OVERTIME" IS PAID FOR ONLY THOSE HOURS WORKED OVER 40 IN A WEEK OR FOR TIME WORKED ON A UNIVERSITY DESIGNATED HOLIDAY.
5. SIGNATURE & PHONE NUMBER OF THE DEPARTMENT'S AUTHORIZED SIGNER ARE NECESSARY. (SEE SPG 518.1 REGARDING EMPLOYEE SIGNATURE.)
6. PLEASE RETAIN THIS FORM FOR FUTURE USE IF NO TIME IS BEING SUBMITTED FOR THIS PERIOD. USE THIS FORM IN THE NEXT CYCLE IN WHICH THE EMPLOYEE WORKS. CHANGE THE PAY PERIOD END DATE IN SECTION D AND LINE OUT THE ASSIGNED 5-DIGIT DOCUMENT NUMBER AT THE TOP RIGHT (A NEW DOCUMENT NUMBER WILL BE ASSIGNED BECAUSE THIS IS A DIFFERENT PAY PERIOD) PRIOR TO SUBMITTING. NOTE: PREPRINTED FORMS ARE ONLY CREATED WHEN 1) TIME HAS BEEN SUBMITTED AND PAID IN THE PREVIOUS CYCLE; OR 2) FOR A NEW EMPLOYEE; OR 3) AN ACCOUNT HAS BEEN ADDED OR CHANGED ON THE PAYROLL FILES.
7. TO TERMINATE THIS APPOINTMENT, ENTER AN "X" IN THE BOX IN SECTION E AND ENTER THE DATE AND REASON.

FORM 3067 5/91

WHEN RETURNING FORMS TO PAYROLL, PLEASE GROUP TEMPORARY AND REGULAR FORMS SEPARATELY.

For questions on Pay input or Timekeeping/Attendance, refer to "Payroll Dept." in the Staff Directory for correct phone number.

INSTRUCTIONS FOR REGULAR BIWEEKLY FORM

For a new hire, transfer, or when a preprinted form is not available, use a blank form and print the employee name, Social Security Number, pay period end date, and at the bottom, enter account number(s), scheduled hours and account name. For the balance of the input, on a blank or preprinted form, follow these instructions

1A. "SCHEDULED HOURS WORKED" COLUMN - Enter actual hours worked per your work schedule. (Do not enter any overtime at regular rate or 1½ rate in this column.)

1B. Shift-A/M/S A = Afternoon, M = Midnight, S = Special Schedule (AFSCME only). Use this column to record A, M, or S for any shift premium due for that day. See 4A & 4B for summary posting.

2. "EXCEPTION TIME" COLUMN - Exception time includes vacation, sick time, overtime, and absence without pay, among others. Exception time Codes/Descriptions appear below.

3. SUMMARY - "OVERTIME HOURS" - Any exception time hours posted in Daily boxes for Exception Code 03 - overtime at the regular rate - or Exception Code 04 - overtime at the 1½ regular rate - must be summarized and entered in the Overtime Hours Summary section.

4A. SUMMARY - "SHIFT PREMIUM HOURS" - If the employee is scheduled for afternoon or midnight shift, enter the total hours to be paid for shift premium in the appropriate Afternoon or Midnight Regular Rate section and enter total overtime shift hours in that section.

4B. Special Schedule Shift for AFSCME must also be posted to shift summary.

5. Scheduled Days Off - On days when you are not scheduled to work, leave all columns blank except for recording Holiday pay per SPG 201.26.

6. Effort Distribution Certification - If the preprinted effort distribution varies more than 5%, you must complete an Effort Change Report (available in Payroll Office) and submit it with this Biweekly Time Report to the Payroll Office.

7. The Time Report must be signed by the Department's authorized signer, phone number entered, and returned to the Payroll Office.

	EXCEPTION CODES/DESCRIPTION	SPG # OR SEE UNION CONTRACT
01*	Vacation	201.64
02*	Sick (Preventative - Dr. Appts)	201.11
22*	Sick - Illness, Injury	201.11
28*	Sick - Family Care	201.11
03	Overtime - Regular Rate (Total of 03 Hours Must be Posted to Summary)	201.38
04	Overtime - 1½ Rate (Total of 04 Hours Must be Posted to Summary)	201.38
05*	Excused Time - Without Pay	....
06*	Unexcused Time - Without Pay	....
07*	Holiday	201.26
08*	Educational Time	201.69
09*	Funeral	201.30
10*	Jury Duty	201.29
11*	Military	201.33
12*	Season Day	201.26-1
13*	Inclement Weather Absence	201.27
14*	Inclement Weather Worked	201.27
15	Borrowed Vacation (Due to Closure)	....
16*	University Business	....
17	1/2 Time (When Scheduled Hours Overlap in a 24-Hour period) (Total ½ Hours Must Be Posted to Daily Exception Column For Each Day and Summary Box (Code 17 Top-Right)	....
27	On Call Hours	
29	Call Back Pay	Union Contract
30	On Call Back	MNA Contract

* THESE EXCEPTION CODES WHEN POSTED, PLUS HOURS WORKED, MUST EQUAL "TOTAL SCHEDULED HOURS" INDICATED ON THE BOTTOM-LEFT OF THE FRONT OF THE FORM.

	EXCEPTION CODES/DESCRIPTION	SPG # OR SEE UNION CONTRACT
31	Dir. Patient Care Prem. NOTE: Code 31 is only paid when O.T. hours worked exceed 40.0 hours of S.T. direct patient care (e.g.; vacation, sick and holiday not considered in arriving at the 40.0 hours for this premium - see MNA contract for eligibility of other types of hours paid). For part-time staff, the premium is not for every O.T. hour worked. See MNA Contract.	MNA Contract
33	Weekend prem. S.T. (3rd W/E in 4 Wk. Sch.)	MNA Contract
34	Weekend prem. S.T. (16 hours or more - 3rd W/E in 4 Wk. Sch.)	MNA Contract
35	Weekend prem. S.T. (4th W/E in 4 Wk. Sch. or 3rd & 4th in 4 Wk. Sch.)	MNA Contract
36	Weekend prem. O.T. (3rd W/E in 4 Wk. Sch.)	MNA Contract
37	Weekend prem. O.T. (16 hrs. or more 3rd W/E in 4 Wk. Sch.)	MNA Contract
38	Weekend Prem. O.T. (4th W/E in 4 Wk. Sch. or 3rd and 4th W/E in 4 Wk. Sch.)	MNA Contract
40	Shift rotation prem. S.T.	MNA Contract
41	Shift rotation prem. O.T.	MNA Contract

Adjustment Amount Code

51	Adjustment
52	Retroactive Adjustment
53	Transcription Incentive
54	Medical Legal Incentive
55	Emergent Work (AFSCME only)

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UROP Undergraduate Research Opportunity Program 1995-1996

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MIDTERM PROGRESS REPORT

Name of Student: ____

Submitted by: ____

Date: ________________

Peer advisor's name: ____

Has the student been showing up for work regularly?

Has the student been showing up for the amount of time she/he committed her/hisself to?

Have you been meeting with your student researcher regularly? If so, how often?

Has the student made progress with his/her project?

What concerns do you have about the student's performance so far?

Where does the student need improvement?

What are some strengths that the student brings to your project?

UROP Undergraduate Research Opportunity Program 1995-1996

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UROP GRADE FORM

The following grade is submitted for ______________________________
for completion of work done for UC280 (letter grade A-E or Pass/Fail) or Eng 195 (letter grade A-E).

Paper Grade: __________

Research Performance: __________

Recommended Overall Grade: __________

Submitted by: ____

Comments:

The student's grade will be based 80% on the above and 20% on their participation in other UROP required activities. You will not receive an official grade sheet for your student(s). The program director will officially submit the grades for UC280. Please return this form by the deadline indicated below.

Deadline: ______________________